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SCIENCE FICTION

JANUARY 1954

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NATURAL STATE  
By Damon Knight



ILL. RAYMOND

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# Galaxy

## SCIENCE FICTION

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Cover by MEL HUNTER Showing FLIGHT OVER MERCURY

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# What Strange Powers Did The Ancients Possess?



EVERY important discovery relating to mind power, sound thinking and cause and effect, as applied to self-advancement, was known centuries ago, before the masses could read and write.

Much has been written about the wise men of old. A popular fallacy has it that their secrets of personal power and successful living were lost to the world. Knowledge of nature's laws, accumulated through the ages, is never lost. At times the great truths possessed by the sages were hidden from unscrupulous men in high places, but never destroyed.

## Why Were Their Secrets Closely Guarded?

Only recently, as time is measured; not more than twenty generations ago, less than 1/100th of 1% of the earth's people were thought capable of receiving basic knowledge about the laws of life, for it is an elementary truism that knowledge is power and that power cannot be entrusted to the ignorant and the unworthy.

Wisdom is not readily attainable by the general public; nor recognized when right within reach. The average person absorbs a multitude of details about things, but goes through life without ever knowing where and how to acquire mastery of the fundamentals of the inner mind—that mysterious silent something which "whispers" to you from within.

## Fundamental Laws of Nature

Your habits, accomplishments and weaknesses are the effects of causes. Your thoughts and actions are governed by fundamental laws. Example: The law

of compensation is as fundamental as the laws of breathing, eating and sleeping. All fixed laws of nature are as fascinating to study as they are vital to understand for success in life.

You can learn to find and follow every basic law of life. You can begin at any time to discover a whole new world of interesting truths. You can start at once to awaken your inner powers of self-understanding and self-advancement. You can learn from one of the world's oldest institutions, first known in America in 1694. Enjoying the high regard of hundreds of leaders, thinkers and teachers, the order is known as the Rosicrucian Brotherhood. Its complete name is the "Ancient and Mystical Order Rosae Crucis," abbreviated by the initials "AMORC." The teachings of the Order are not sold, for it is not a commercial organization, nor is it a religious sect. It is a non-profit fraternity, a brotherhood in the true sense.

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# MOVING DAY

AS individuals, dinosaurs seldom died of old age. As a race, however, they lasted some 100,000,000 years.

As individuals, most of us manage to die of natural causes. As a race, however, we feel extinction approaching after less than 1,000,000 years.

Purely on the basis of racial survival, it looks as if being a dinosaur was a better risk than being a man.

I doubt if any dinosaurs thought for a second about carrying on the family name. There are other differences between them and mankind, but that's probably the most important one.

Most people sound like dinosaurs on the question of survival; they claim they're more interested in their own than humanity's. But the intense concern with racial doom indicates the opposite—few of us would find very much point in life if the race died.

The dinosaurs never knew what hit them. One millennium, they were contentedly chewing up the countryside and each other; the next, they were gone. Even if they had known what was happening to them, they could not have stopped it.

We do know, all too acutely, the threats facing us. Solving them is another matter, but we are aware of them, which is the first step in working out a problem.

All right, now let's pick the most imminent threat. We each have our favorite, ranging from the effect of noise on the human organism to that of fusion on the atmosphere. Mine—for the purpose of this editorial, at least—is overpopulation.

A century and a half ago, Malthus noted that population tends to increase more rapidly than food supply. That part of his argument makes sense, especially if *tends* is emphasized. The other part is more questionable: Unless birth is controlled, he said, increase must be checked by poverty and war.

Well, the current annual increase is 25,000,000, which very naturally draws compound interest.

That's on the one hand. There are enough other hands to resemble Siva:

Malthus would have called the size of the present population impossible. It is—for the technology of his day. Where agricultural techniques have kept pace with increase, food supplies

vary from adequate to glut. The pressure spots of the world, such as India and China, actually have lower rates of increase than elsewhere; their trouble is static agricultural methods.

While most of the world has been growing in population, some countries, notably Ireland and France, have been confronted by falling birth rates. Why? Can it happen in other places? Incidentally, when it happens in a functioning economy, the result is as disastrous as growth is to a faltering one.

The solutions Malthus gave—birth control, poverty (famine and disease) and war—haven't yet proved effective. The weapons we're building might be able to solve the problem, but only by creating a worse one.

Mining the sea and synthesizing food could merely delay the final explosion. They're not answers in themselves.

**T**HE one suggested most often in science fiction is migration—moving whole populations to wherever there is room: other planets, reclaimed deserts, Amazonia, Africa, bubble cities under the ocean.

Are the authors being realistic? Let's see if they are.

The Nazis and Russians did move millions of people at a profit. But they were simply

herded off, in freight cars or on foot, and worked as slaves. No attempt was made to resettle them as humans. All this, remember, was by land. If it had to be done by sea or air, I doubt if even the most callous packing would have been economical enough.

To complicate matters, we humanely would provide decent transportation, at least minimally adequate housing, proper food, training in needed skills, and farms, factories, shops and labs. This is the resettlement program Israel is following—and the cost is crushing.

The most modest goal we could settle for would be to siphon off the 25,000,000 extras per year. Whether by sea, air or spaceship, it would be a vast transportation job. But besides the gigantic fleets and rivers of fuel, we'd need enormous reception and training camps, mountainous food supplies, cadre armies, a relocation plan capable of almost infinite expansion to absorb so many people annually.

No, the solution is not at all realistic—at present. Yet that is where we have the edge on the dinosaurs and those who think in saurian fashion:

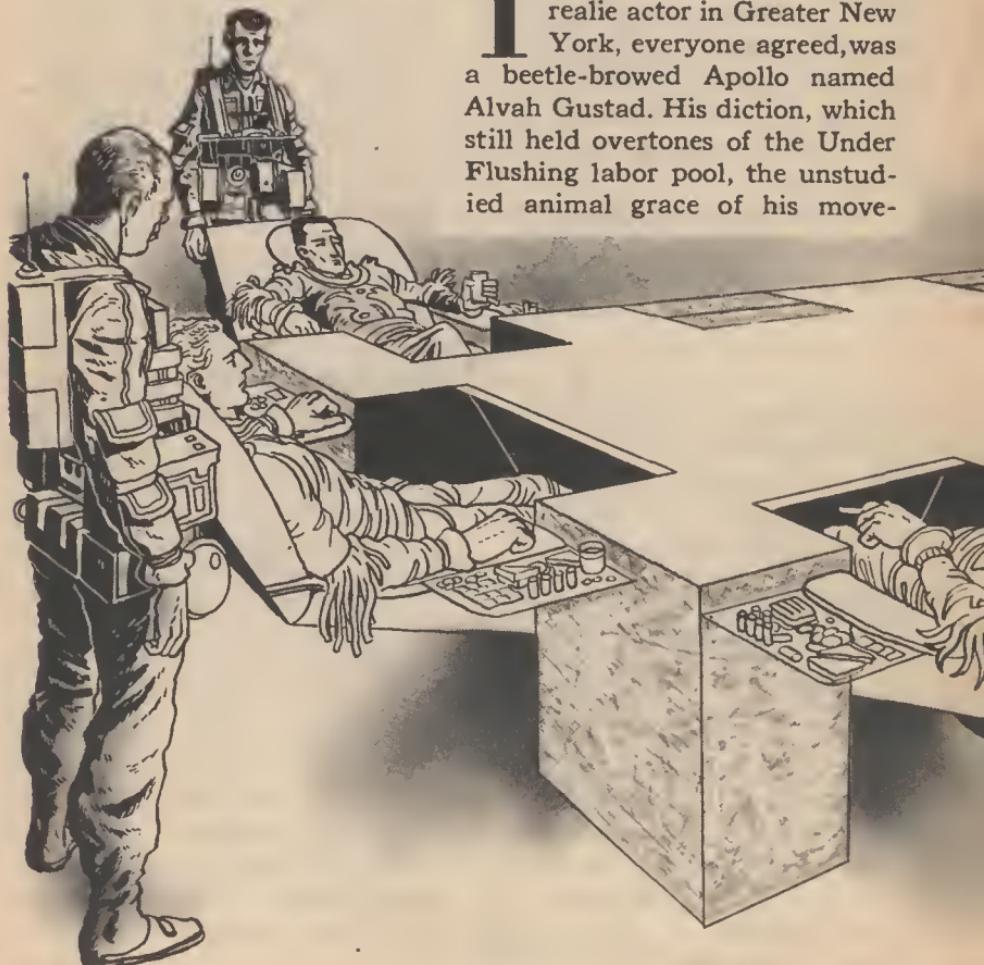
We know that one generation's impossibility is the next generation's commonplace.

—H. L. GOLD

# Natural State

*It was a world of wildest paradoxes—patriotism, for example, meant all loyalty to the city and all hatred for the country!*

THE most promising young realie actor in Greater New York, everyone agreed, was a beetle-browed Apollo named Alvah Gustad. His diction, which still held overtones of the Under Flushing labor pool, the unstudied animal grace of his move-



By  
**DAMON KNIGHT**



Illustrated  
by EMSH

**NATURAL STATE**

ments and his habitually sullen expression enabled him to dominate any stage not occupied by an unclothed woman at least as large as himself. At twenty-six, he had a very respectable following among the housewives of Manhattan, Queens, Jersey and the rest of the seven boroughs. The percentage of blown fuses resulting from subscribers' attempts to clutch his realized image was extraordinarily low—Alvah, his press agents explained with perfect accuracy, left them too numb.

Young Gustad, who frequently made his first entrance water-beaded as from the shower, with a towel girded chastely around his loins, was nevertheless in his private life a modest and slightly bewildered citizen, much given to solitary reading, and equipped with a perfect set of the conventional virtues.

These included cheerful performance of all municipal duties and obligations—like every right-thinking citizen, Gustad held down two jobs in summer and three in winter. At the moment, for example, he was an actor by day and a metals-reclamation supervisor by night.

Chief among his less tangible attributes, was that emotion which in some ages has been variously described as civic pride or patriotism. In A.D. 2064, as

in B.C. 400, they amounted to the same thing.

**B**EHIND the Manager's desk, the wall was a single huge slab of black duroplast, with a map of the city picked out in pinpoints of brilliance. As Gustad entered with his manager and his porter, an unseen chorus of basso profundos broke into the strains of *The Sidewalks of New York*. After four bars, it segued to *New York, New York, It's a Pip of a Town* and slowly faded out.

The Manager himself, the Hon. Boleslaw Wytak, broke the reverent hush by coming forward to take Alvah's hand and lead him toward the desk. "Mr. Gustad—and Mr. Diamond, isn't it? Great pleasure to have you here. I don't know if you've met all these gentlemen. Commissioner Laurence, of the Department of Extramural Relations—Director Ostertag, of the Bureau of Vital Statistics—Chairman Neddo, of the Research and Development Board."

Wytak waited until everyone was comfortably settled in one of the reclining chairs which fitted into slots in the desk, with cigars, cigarettes, liquor capsules and cold snacks at each man's elbow. "Now, Mr. Gustad—and Mr. Diamond—I'm a plain blunt man and I know you're wondering why I asked you to come here today. I'm going to tell you. The

City needs a man with great talent and great courage to do a job that, I tell you frankly, I wouldn't undertake myself without great misgivings." He gazed at Gustad warmly, affectionately but sternly. "You're the man, Alvah."

Little Jack Diamond cleared his throat nervously. "What kind of a job did you have in mind, Mr. Manager? Of course, anything we can do for our city . . ."

Wytak's big face, without perceptibly moving a muscle, somehow achieved a total change of expression. "Alvah, I want you to go to the Sticks."

Gustad blinked and tilted upright in his chair. He looked at Diamond.

The little man suddenly seemed two sizes smaller inside his box-cut cloth-of-silver tunic. He gestured feebly and wheezed, "Wake-me-up!" The porter behind his chair stepped forward alertly, clanking, and flipped open one of the dozens of metal and plastic boxes that clung to him all over like barnacles. He popped a tiny capsule into his palm, rolled it expertly to thumb-and-finger position, broke it under Diamond's nose.

A reeking-sweet green fluid dripped from it and ran stickily down the front of Diamond's tunic.

"Dumbhead!" said Diamond. "Not cream de menty, a wake-

me-up!" He sat up as the abashed servant produced another capsule. "Never mind." Some color was beginning to come back into his face. "Blotter!" A wad of absorbent fibers. "Vacuum!" A lemon-sized globe with a flaring snout. "Gon-Stink! Presser!"

Gustad looked back at the Manager. "Your Honor, you mean you want me to go into the Sticks? I mean," he said, groping for words, "you want me to play for the *Muckfeet*?"

"That is just exactly what I want you to do." Wytak nodded toward the Commissioner, the Director, and the Chairman. "These gentlemen are here to tell you why. Suppose you start, Ozzie."

**O**STERTAG, the one with the fringe of yellowish white hair around his potato-colored pate, shifted heavily and stared at Gustad. "In my bureau, we have records of population and population density, imports and exports, ratio of births to deaths and so on that go back all the way to the time of the United States. Now this isn't known generally, Mr. Gustad, but although New York has been steadily growing ever since its founding in 1646, our growth in the last thirty years has been entirely due to immigration from other less fortunate cities.

"In a way, it's fortunate—I mean to say that we can't expand *horizontally*, because it has been found impossible to eradicate the soil organisms—" a delicate shudder ran around the group—"left by our late enemies. And as for continuing to build vertically—well, since Pittsburgh fell, we have been dependent almost entirely on salvaged scrap for our steel. To put it bluntly, unless something is done about this situation, the end is in sight. Not alone of this administration, but of the city as well. Now the reasons for this—ah—what shall I say . . . ?"

With his head back, staring at the ceiling, Wytak began to speak so quietly that Ostertag blundered through another phrase and a half before he realized he had been superseded as interlocutor.

"Thirty years ago, when I first came to this town, an immigrant kid with nothing in the whole world but the tunic on my back and the gleam in my eye, we had just got through with the last of the Muckfeet Wars. According to your history books, we won that war. I'll tell you something—we were licked!"

Alvah squirmed uncomfortably as Wytak raised his head and glanced defiantly around the desk, looking for contradiction. The Manager said, "We drove them back to the Ohio, thirty

years ago. And where are they now?" He turned to Laurence. "Phil?"

Laurence rubbed his long nose with a bloodless forefinger. "Their closest settlement is twelve miles away. That's to the southwest, of course. In the west and north—"

"Twelve miles," said Wytak reflectively. "But that isn't the reason I say they licked us. They licked us because there are twenty million of us today . . . and about one hundred fifty million of them. Right, Phil?"

Laurence said, "Well, there aren't any accurate figures, you know, Boley. There hasn't been any census of the Muckfeet for almost a century, but—"

"About one hundred fifty million," interrupted Wytak. "Even if we formed a league with every other city on this continent, the odds would be heavily against us—and they breed like flies." He slapped the desk with his open palm. "So do their filthy animals!"

**A** SHUDDER rippled across the group. Diamond shut his eyes tight.

"There it is," said Wytak. "Rome fell. Babylon fell. The same thing can happen to New York. Those illiterate savages will go on increasing year by year, getting more ignorant and more degraded with every genera-

tion . . . and a century from now—or two, or five—they'll be the human race. And New York . . .”

Wytak turned to look at the map behind him. His hand touched a button and the myriad tiny lights went out.

Gustad was not an actor who wept readily, but he felt tears welling over his eyelids. At the same time, the thought crossed his mind that, competition being what it was in the realies, it was a good thing that Wytak had gone into politics instead of acting.

“Sir,” he said, “what can we do?”

Wytak's eyes were focused far away. After a moment, his head turned heavily on his massive shoulders, like a gun turret. “Chairman Neddo has the answer to that. I want you to listen carefully to what he's going to tell you, Alvah.”

Neddo's crowded small face flickered through a complicated series of twitches, all centripetal and rapidly executed. “Over the past several years,” he said jerkily, “under Manager Wytak's direction, we have been developing certain devices, certain articles of commerce, which are designed, especially designed, to have an attraction for the Muckfeet. Trade articles. Most of these, I should say all of—”

“Trade articles,” Wytak cut

in softly. “Thank you, Ned. That's the phrase that tells the story. Alvah, we're going to go back to the principles that made our ancestors great. Trade—expanding markets—expanding industries. Think about it. From the Arctic Ocean to the Gulf of Mexico, there are some 150 million people who haven't got a cigarette lighter or a wristphone or a realie set among them. Alvah, we're going to civilize the Muckfeet. We've put together a grabbag of modern science, expressed in ways their primitive minds can understand—and you're the man who's going to sell it to them! What do you say to that?”

This was a familiar cue to Gustad—it had turned up for the fiftieth or sixtieth time in his last week's script, when he had played the role of a kill-crazy sewer inspector, trapped by flood waters in the cloacae of Under Brooklyn. “I say—” he began, then realized that his usual response was totally inappropriate. “It sounds wonderful,” he finished weakly.

WYTAK nodded in a businesslike way. “Now here's the program.” He pressed a button, and a relief map of the North American continent appeared on the wall behind him. “Indicator.” Wytak's porter put a metal tube with a shaped grip

into his hand—a tiny spot on the map fluoresced where he pointed it.

"You'll swing down to the southwest until you cross the Tennessee, then head westward about to here, then up through the Plains, then back north of the Great Lakes and home again. You'll notice that this route keeps you well clear of both Chicago and Toronto. Remember that—it's important. We know that Frisco is working on a project similar to ours, although they're at least a year behind us. If we know that, the chances are that the other Cities know it too, but we're pretty sure there's been no leak in our own security. There isn't going to be any."

He handed the indicator back. "You'll be gone about three months . . .

Diamond was having trouble with his breathing again.

" . . . You'll have to rough it pretty much—there'll be room in your floater for you and your equipment, and that's all."

Diamond gurgled despairingly and rolled up his eyes. Gustad himself felt an unpleasant sinking sensation.

"You mean," he asked incredulously, "I'm supposed to go all by myself—without even a *porter*?"

"That's right," said Wytak. "You see, Alvah, you and I are

civilized human beings—we know there are so many indispensable time and labor saving devices that nobody could possibly carry them all himself. But could you explain that to a Muckfoot?"

"I guess not."

"That's why only a man with your superb talents can do this job for the City. Those people actually live the kind of sordid brutal existence you portray so well in the realies. Well, you can be as rough and tough as they are—you can talk their own language, and they'll respect you."

Gustad flexed his muscles slightly, feeling pleased but not altogether certain. Then a new and even more revolting aspect of this problem occurred to him. "Your Honor, suppose I got along too well with the Muckfeet? I mean suppose they invited me into one of their houses to—" he gagged slightly—"eat?"

Wytak's face went stony. "I am surprised that you feel it necessary to bring that subject up. All that will be covered very thoroughly in the briefing you will get from Commissioner Lawrence and Chairman Neddo and their staffs. And I want you to understand, Gustad, that no pressure of any kind is being exerted on you to take this assignment. This is a job for a willing, cooperative volunteer, not a draftee."

If you feel you're not the man for it, just say so now."

Gustad apologized profusely. Wytkak interrupted him, with the warmest and friendliest smile imaginable. "That's all right, son, I understand. I understand perfectly. Well, gentlemen, I think that's all."

**A**S soon as they were alone, Diamond clutched Gustad's sleeve and pulled him over to the side of the corridor. "Listen to me, Al boy. We can still pull you out of this. I know a doctor that will make you so sick you couldn't walk across the street. He wouldn't do it for everybody, but he owes me a couple of—"

"No, wait a minute. I don't—"

"I know, I know," said Diamond impatiently. "You'll get your contract busted with Seven Boroughs and you'll lose a couple months, maybe more, and you'll have to start all over again with one of the little studios, but what of it? In a year or two, you'll be as good as—"

"Now wait, Jack. In the first—"

"Al, I'm not just thinking about my twenty per cent of you. I don't even care about that—it's just money. What I want, I want you should still be alive next year, you understand what I mean?"

"Look," said Gustad, "you don't understand, Jack. I want to

go. I mean I don't exactly want to, but—" He pointed down the corridor to the window that framed a vista of gigantic columns, fiercely brilliant below, fading to massive darkness above, with a million tiny floater-lights drifting like a river of stardust down the avenue. "Just look at that. It took thousands of years to build! I mean if I can keep it going just by spending three months . . .

"And besides," he added practically, "think of the publicity."

## II

**T**HE foothill country turned out to be picturesque but not very rewarding. Alvah had bypassed the ancient states of Pennsylvania and Maryland as directed, since the tribes nearest the city were understood to be still somewhat rancorous. By the end of his first day, he was beginning to regard this as a serious understatement.

He had brought his floater down, with flags flying, loudspeakers blaring, colored lights flashing and streamers flapping gaily behind him, just outside an untidy collection of two-story beehive huts well south of the former Pennsylvania border. He had seen numerous vaguely human shapes from the air, but when he extruded his platform

and stepped out, every visible door was shut, the streets were empty, and there was no moving thing in sight, except for a group of singularly unpleasant-looking animals in a field to his right.

After a few moments, Gustad shut off the loudspeakers and listened. He thought he heard a hum of voices from the nearest building. Suppressing a momentary qualm, he lowered himself on the platform stair and walked over to the building. It had a single high window, a crude oval in shape, closed by a discolored pane.

Standing under this window, Alvah called, "Hello in there!"

The muffled voices died away for a moment, then buzzed as busily as ever.

"Come on out—I want to talk to you!"

Same result.

"You don't have to be afraid! I come in peace!"

The voices died away again, and Alvah thought he saw a dim face momentarily through the pane. A single voice rose on an interrogative note.

"Peace!" Alvah shouted.

The window slid abruptly back into the wall and, as Alvah gaped upward, a deluge of slops descended on him, followed by a gale of coarse laughter.

Alvah's immediate reaction, after the first dazed and gasping

instant, was a hot-water-and-soap tropism, carrying with it an ardent desire to get out of his drenched clothes and throw them away. His second, as imperious as the first, had the pure flame of artistic inspiration—he wanted to see how many esthetically satisfying small pieces one explosive charge would make out of that excrescence-shaped building.

*Under no conditions, said the handbook he had been required to memorize, will you commit any act which might be interpreted by the Muckfeet as aggressive, nor will you make use of your weapons at any time, unless such use becomes necessary for the preservation of your own life.*

Alvah wavered, grew chilly and retired. Restored in body, but shaken in spirit, he headed south.

Then there had been his encounter with the old man and the animal. Somewhere in the triangle of land between the Mississippi and the Big Black, at a point which was not on his itinerary at all, but had the overwhelming attraction of being more than a thousand air-miles from New York, he had set the floater down near another sprawling settlement.

**A**S usual, all signs of activity in and around the village promptly disappeared. With new-

ly acquired caution, Alvah sat tight. Normal human curiosity, he reasoned, would drive the Muckfeet to him sooner or later—and even if that failed, there was his nuisance value. How long could you ignore a strange object, a few hundred yards from your home, that was shouting, waving flags, flashing colored lights and sending up puffs of pink-and-green smoke?

Nothing happened for a little over an hour. Then, half dozing in his control chair, Alvah saw two figures coming toward him across the field.

Alvah's ego, which had been taking a beating all day, began to expand. He stepped out onto the platform and waited.

The two figures kept coming, taking their time. The tall one was a skinny loose-jointed oldster with a conical hat on the back of his head. The little one ambling along in front of him was some sort of four-footed animal.

In effect, an audience of one—at any rate, it was Alvah's best showing so far. He mentally rehearsed his opening lines. There was no point, he thought, in bothering with the magic tricks or the comic monologue. He might as well go straight into the sales talk.

The odd pair was now much closer, and Gustad recognized the

animal half of it. It was a so-called watchdog, one of the incredibly destructive beasts the Muckfeet trained to do their fighting for them. It had a slender, supple body, a long feline tail and a head that looked something like a terrier's and something like a housecat's. However, it was not half as large or as frightening in appearance as the pictures Alvah had seen. It must, he decided, be a pup.

**T**WO yards from the platform, the oldster came to a halt. The watchdog sat down beside him, tongue lolling wetly. Alvah turned off the loudspeakers and the color displays.

"Friend," he began, "I'm here to show you things that will astound you, marvels that you wouldn't believe unless you saw them with your own—"

"You a Yazoo?"

Thrown off stride, Alvah gaped. "What was that, friend?"

"Ah said—you a Yazoo?"

"No," said Alvah, feeling reasonably positive.

"Any kin to a Yazoo?"

"I don't think so."

"Git," said the old man.

Unlikely as it seemed, a Yazoo was apparently a good thing to be. "Wait a second," said Alvah. "Did you say Yazoo? I didn't understand you there at first. Am I a Yazoo? Why, man, my whole

family on both sides has been—" what was the plural of Yazoo?

"Ah'll count to two," said the old man. "One."

"Now wait a minute," said Alvah, feeling his ears getting hot. The watchdog, he noticed, had hoisted its rump a fraction of an inch and was staring at him in a marked manner. He flexed his right forearm slightly and felt the reassuring pressure of the pistol in its pop-out holster. "What makes you Muckfeet think you can—"

"Two," said the oldster, and the watchdog was a spread-eagled blur in midair, seven feet straight up from the ground.

Instinct took over. Instinct had nothing to do with pistols or holsters, or with the probable size of a full-grown Muckfoot watchdog. It launched Alvah's body into a backward standing broad jump through the open floater door, and followed that with an economical underhand punch at the control button inside.

The door slammed shut. It then bulged visibly inward and rang like a gong. Sprawled on the floor, Gustad stared at it incredulously. There were further sounds—a thunderous growling and a series of hackle-raising skrieks, as of hard metal being gouged by something even harder. The whole floater shook.

Alvah made the control chair

in one leap, slammed on the power switch and yanked at the steering bar. At an altitude of about a hundred feet, he saw the dark shape of the watchdog leap clear and fall, twisting.

A few seconds later, he put the bar into neutral and looked down. Man and watchdog were moving slowly back across the field toward the settlement. As far as Alvah could tell, the beast was not even limping.

**A**LVAH'S orders were reasonably elastic, but he had already stretched them badly in covering the southward leg of his route in one day. Still, there seemed to be nothing else to do. Either there was an area somewhere on the circuit where he could get the Muckfeet to listen to him, or there wasn't. If there was, it would make more sense to hop around until he found it, and then work outward to its limits, than to blunder straight along, collecting bruises and insults.

And if there wasn't—and this did not bear thinking about—then the whole trip was a bust.

Alvah switched on his communicator and tapped out the coded clicks that meant, "Proceeding on schedule"—which was a lie—"no results yet"—which was true. Then he headed north.

Nightfall overtook him as he

was crossing the Ozark Plateau. He set the floater's controls to hover at a thousand feet, went to bed and slept badly until just before dawn. With a cup of kaffin in his hand, he watched this phenomenon in surprised disapproval: The scattered lights winking out below, the first colorless hint of radiance, which illuminated nothing, but simply made the Universe seem more senselessly vast and formless than before; finally, after an interminable progression of insignificant changes, the rinds of orange and scarlet, and the dim Sun bulging up at the rim of the turning Earth.

It was lousy theater.

How, Alvah asked himself, could any human being keep himself from dying of sheer irrelevance and boredom against a background like that? He was aware that billions had done so, but his general impression of history was that people who didn't have a city always got busy improving themselves until they could build one or take one away from somebody else. All but the Muckfeet . . .

*Once their interest has been engaged, said the handbook at one point, you will lay principal stress upon the competitive advantages of each product. It will be your aim to create a situation in which ownership of one or*

*more of our products will be not only an economic advantage, but a mark of social distinction. In this way, communities which have accepted the innovations will, in order to preserve and extend the recognition of their own status, be forced to convert members of neighboring communities.*

Well, maybe so.

Alvah ate a Spartan breakfast of protein jelly and citron cakes, called in the coordinates and the time to the frog-voiced operator in New York, and headed the floater northward again.

The landscape unrolled itself. If there were any major differences between this country and the districts he had seen yesterday, Alvah was unable to discern them. In the air, he saw an occasional huge flapping shape, ridden by human figures. He avoided them, and they ignored him. Below, tracts of dark-green forest alternated predictably with the pale green, red or violet of cultivated fields. Here and there across the whole visible expanse, isolated buildings stood. At intervals, these huddled closer and closer together and became a settlement. There were perhaps more roads as he moved northward, dustier ones. That was all.

**T**HE dustiness of these roads, it occurred to Alvah, was a matter that required investigation.

The day was cloudless and clear; there was no wind at Alvah's level, and nothing in the behavior of the trees or cultivated plants to suggest that there was any farther down.

He slowed the floater and lowered it toward the nearest road. As he approached, the thread of ocher resolved itself into an irregular series of expanding puffs, each preceded by a black dot, the overall effect being that of a line of black-and-tan exclamation points. They seemed to be moving barely perceptibly, but were actually, Alvah guessed, traveling at a fairly respectable clip.

He transferred his attention to another road. It, too, was filled with hurrying dots, as was the next—and all the traffic was heading in approximately the same direction, westward of Alvah's course.

He swung the control bar over. The movement below, he was able to determine after twenty minutes' flying, converged upon a settlement larger than any he had yet seen. It sprawled for ten miles or more along the southern shore of a long and exceedingly narrow lake. Most of it looked normal enough—a haphazard arrangement of cone-roofed buildings—but on the side away from the lake, there was a fairly extensive area filled with what seemed

to be long, narrow sheds. This, in turn, was bounded on two sides by a strip of fenced-in plots in which, as nearly as Alvah could make out through the dust, animals of all sizes and shapes were penned. It was this area which appeared to be the goal of every Muckfoot in the central Plains.

The din was tremendous as Alvah floated down. There were shouts, cries, animal bellowings, sounds of hammering, occasional blurts of something that might be intended to be music, explosions of laughter. The newcomers, he noted, were being herded with much confusion to one or another of the fenced areas, where they left their mounts. Afterward, they straggled across to join the sluggish river of bodies in the avenues between the sheds.

No one looked up or noticed the dim shadow of the floater. Everyone was preoccupied, shouting, elbowing, blowing an instrument, climbing a pole. Alvah found a clear space at some distance from the sheds—as far as he could conveniently get from the penned animals—and landed.

He had no idea what this gathering was about. For all he knew, it might be a war council or some kind of religious observance, in which case his presence might be distinctly unwelcome. But in any case, there were customers here. 7

He looked dubiously at the stud that controlled his attention-catchers. If he used them, he would only be following directives, but he had a strong feeling that it would be a faux pas to do so in this situation. At the other extreme, the obvious thing to do was to get out and go look for someone in authority. This would involve abandoning the protection of the floater, however, and he might blunder into some taboo place or ceremony.

Evidently his proper course was to wait unobtrusively until he was discovered. On the other hand, if he stayed inside the floater with the door shut, the Muckfeet might take more alarm than if he showed himself. Still, wasn't it possible that they would be merely puzzled by a floater, whereas they would be angered by a floater with a man on its platform? Or, taking it from another angle . . .

The hell with it.

**A**LVAH ran the platform out, opened the door and stepped out. He was relieved when, as he was considering the delicate problem of whether or not to lower the stair, a small group of men and urchins came into view around the corner of the nearest shed, a dozen yards away from him.

They stopped when they saw

him, and two or three of the smallest children scuttled behind their elders. They exchanged looks and a few words that Alvah couldn't hear. Then a pudgy little man with a fussed expression crowded forward, and the rest followed him at a discreet distance.

"Hello," said Alvah tentatively.

The little man came to a halt a yard or so from the platform. He had a white badge of some kind pinned to his shapeless brown jacket, and carried a sheaf of papers in his hand. "Who might you be?" he asked irritably.

"Alvah Gustad is my name. I hope I'm not putting you people out, parking in your area like this, Mr.—"

"Well, I should hope to spit you *is*, though. Supposed to be a tent go up right *there*. Got to be one by noon. What did you say your name was, Gus what?"

"Gustad. I don't believe I caught your name, Mr. —"

"Don't signify what *my* name is. We're talking about *you*. What clan you belong to?"

"Uh—Flatbush," said Alvah at random. "Look, as long as I'm in the way here, you just tell me where to move to and—"

"Some little backwoods clan, I never even *heard of it*," said the pudgy man. "I'll tell you where

you can move to. You can just haul that thing back where you come from. Gustad—Flatbush! You ain't on my list, I know that."

The other Muckfeet had moved up gradually to surround the little man. One of them, a lanky sad-faced youngster, nudged him with his elbow. "Might just check and see, Jake."

"Well, I ought to know. My land, Artie, I got my work to do. I can't spend all day standing here."

Artie's long face grew more mournful. "You thought them Keokuks wasn't on the list, either."

"Well—all right then, rot it." To Alvah: "What's your marks?"

Alvah blinked. "I don't—"

"Come down offa there." Jake turned impatiently to a man behind him. "Give'm a stake." As Alvah came hesitantly down the stair, he found he was being offered a sharpened length of wood by a seamy-faced brown man, who carried a bundle of others like it under his arm.

Alvah took it, without the least idea of what to do next. The brown man watched him alertly. "You c'n make your marks with that," he volunteered and pointed to the ground between them.

The others closed in a little.

"Marks?" said Alvah worriedly.

THE brown man hesitated, then took another stake from his bundle. "Like these here," he said. "These is mine." He drew a shaky circle and put a dot in the center of it. "George." A figure four. "Allister—that's me." A long rectangle with a loop at each end. "Coffin—that's m' clan."

Jake burst out, "Well, crying in a bucket; he knows that! You know how to sign your name, don't you?"

"Well," said Alvah, "yes." He wrote *Alvah Gustad* and, as an afterthought, added *Flatbush*.

There were surprised whistles. "Wrote it just as slick as Doc!" said a ten-year-old tow-headed male, bug-eyed with awe.

Jake stared at Alvah, then spun half around to wave his papers under Artie's nose. "Well, you satisfied now, Artie Brumbacher? I guess that ain't on my list, is it?"

"No," Artie admitted, "I guess it ain't—not if you can read the list, that is."

Everybody but Alvah laughed, Jake louder than anyone. "All right," he said, turning back to Alvah, "you just hitch up your brutes and get that thing out of here. If you ain't gone by the time I—"

"Jake!" called a businesslike female voice, and a small figure came shouldering through the

crowd. "They need you over in the salamander shed—the Quincies are ready to move in, but there's some Sullivans ahead of them." She glanced at Alvah, then at the floater behind him. "You having any trouble here?"

"All settled now," Jake told her. "This feller ain't on the list. I just give him his *marching* orders."

"Look, if I can say something—" Alvah began.

The girl interrupted him. "Did you want to exhibit something at the Fair?"

"That's right," said Alvah gratefully. "I was just trying to explain—"

"Well, you're late, but maybe we can squeeze you in. You won't sell anything, though, if it's what I think it is. Let me see that list, Jake."

"Now wait a minute," said Jake indignantly. "You know we ain't got room for nobody that ain't on the *list*. We got enough trouble—"

"The Earth-movers won't be here from Butler till tomorrow," said the girl, examining the papers. "We can put him in there and move him out again when they get here. You need any equipment besides what you brought?"

"No," said Alvah. "That would be fine, thanks. All I need is a place—"

"All right. Before you go, Jake, did you tell those Sullivans they could have red, green and yellow in the salamander shed?"

"Well, sure I did. That what it says right there."

SHE handed him back the papers and pointed to a line. "That's Quincy, see? Dot instead of a cross. Sullivans are supposed to have that corner in the garden truck shed, keep the place warm for the seedlings, but they won't budge till you tell them it was a mistake. Babbishes and Stranahans are fit to be tied. You get over there and straighten them out, will you? And don't worry too much about *him*."

Jake snorted and moved away, still looking ruffled. The girl turned to Alvah. "All right, let's go."

Unhappy but game, Alvah turned and climbed back into the floater with the girl close behind him. The conditioning he'd had just before he left helped when he was in the open air, but in the tiny closed cabin of the floater the girl's triply compounded stench was overpowering.

How did they live with themselves?

She leaned over the control chair, pointing. "Over there," she said. "See that empty space I'm pointing at?"

Alvah saw it and put the floater there as fast as the generator would push it. The space was not quite empty—there were a few very oddly assorted Muck-feet and animals in it, but they straggled out when they saw him hovering, and he set the floater down.

To his immense relief, the girl got out immediately. Alvah followed her as far as the platform.

### III

IN a tailor shop back in Middle Queens, the proprietors, two brothers named Wynn, whose sole livelihood was the shop, stared glumly at the bedplate where the two-hundred-gallon Klenomatic ought to have been.

"He say anything when he took it away?" Clyde asked.

Morton shrugged and made a sour face.

"Yeah," said Clyde. He looked distastefully at a dead cigar and tossed it at the nearest oubliette. He missed.

"He said a month, two months," Morton told him. "You know what that means."

"Yeah."

"So I'll call up the factory," Morton said violently. "But I know what they're gonna tell me. Give us a deposit and we'll put you on a waiting list. Waiting list!"

"Yeah," said Clyde.

In a factory in Under Bronnix, the vice president in charge of sales shoved a thick folder of coded plastic slips under the nose of the vice president in charge of production. "Look at those orders," he said.

"Uh-huh," said Production.

"You know how far back they go? *Three years*. You know how much money this company's lost in unfilled orders? Over two million—"

"I know. What do you expect? Every fabricator in this place is too old. We're holding them together with spit and string. Don't bother me, will you, Harry. I got my own—"

"Listen," said Sales. "This can't go on much longer. It's up to us to tell the Old Man that he's got to try a bigger bribe on the Metals people. Mortgage the plant if we have to—it's the only thing to do."

"We have more mortgages now than the plant is worth."

Sales reddened. "Nick, this is serious. Last fall, it looked like we might squeeze through another year, but now . . . You know what's going to happen in another eight, ten months?" He snapped his fingers. "Right down the drain."

Production blinked at him wearily. "Bribes are no good any more, Harry. You know that as

well as I do. They're out."

"Well, then what are we going to do?"

Production shook his head. "I don't know. I swear to God, I don't know."

**O**VER in Metals Reclamation Four, in Under and Middle Jersey, the night shift was just beginning. In the blue-lit cavern of Ferrous, this involved two men, one bald and flabby, the other gray and gnarled. They exchanged a silent look, then each in turn put his face into the time clock's retinoscope mask. The clock, which had been emitting a shrill irritating sound, gurgled its satisfaction and shut up.

"Well, that's it," said the gray one. "I'll be your work gang and you be mine, huh?"

The flabby one spat. "Wonder what happened to Turk."

"Who cares? I never liked him."

"Just wondering. Yesterday he's here, today where is he? Labor pool, army—" he spat again, with care—"repair, maintenance . . . He was fifteen years in this department. I was just wondering."

"Scooping sewage, probably. That's about his speed." The gray man shambled over to the control bench opposite and looked at the indicators. Then he lighted a cigarette.

"Nothing in the hoppers?" the flabby one asked.

"Nah. They ought to put Turk in the hoppers. He had metal in his goddam teeth. Actual metal!"

"Turk wasn't old," the flabby one said reproachfully. "No more than sixty."

"I never liked him."

"First it was the kid—you know, Pimples. Then, lessee, the next one was that big guy, the realie actor—"

"Gustad. The hell with him."

"Yeah, Gustad. What I mean is, where do they go to? It's the same thing on my three-to-seven shift, over in Yeasts. Guys I knew for ten, fifteen, twenty years on the same job. All of a sudden, they're gone and you never see them. Must be a hell of a thing, starting all over again somewhere else—guys like that—I mean you get set in your ways, kind of."

His eyes were patient and bewildered in their watery pouches. "Guys like me—no kids, nobody that gives a damn about 'em. Kind of gives you the jumps to think about it. You know what I mean?"

The gray one looked embarrassed, then irritated, then defiant. "Aah," he said, and produced a deck of cards from his kit—the grimy coating on the creaseless, frayless plastic as lovingly built and preserved as the patina

in a meerschaum. "Cut for deal. Come on! Let's play."

"**I**II have to know what you going to exhibit," the girl said. "For the Fair records."

"Labor-saving devices," Alvah told her, "the latest and best products of human ingenuity, designed to—"

"Machines," she said, writing. She added, looking up, "There's a fee for the use of the fairground space. Since you're only going to have it for a day, we'll call it twenty twains."

Alvah hesitated. He had no idea what a twain might be—it had sounded like "twain." Evidently it was some sort of crude Muckfoot coinage.

"Afraid I haven't got any of your money," he said, producing a handful of steels from his belt change-meter. "I don't suppose these would do?"

The girl looked at him steadily. "Gold?" she said. "Precious stones, platinum, anything of that kind?" Alvah shook his head. "Sure?" Alvah shrugged despairingly. "Well," she said after a moment, "maybe something can be arranged. I'll let you talk to Doc about it, anyhow. He'll have to decide. Come on."

"Just a minute," Alvah said, and ducked back into the floater. He found what he was looking for and trotted outside again.

"What's that?" asked the girl, looking at the bulky kit at his waist.

"Just a few things I like to have with me."

"Mind showing me?"

"Well—no." He opened the kit. "Cigarette lighter, flashlight, shaver, raincoat, heater, a few medicines over here, jujubes, food concentrates, things like that. Uh, I don't know why I put this in here—it's a distress signal for people who get lost in the subway."

"You never can tell," said the girl, "when a thing like that will come in handy."

"That's true. Uh, this thing that looks like two dumbbells and a corkscrew . . ."

"Never mind," said the girl. "Come along."

The first shed they passed was occupied by things that looked like turtles with glittery four-foot shells. In the nearest stall, a man was peeling off from one of the beasts successive thin layers of this shell-stuff, which turned out to be colorless and transparent. He passed them to a woman, who dipped them into a basin and then laid them on a board to dry. The ones at the far end of the row, Alvah noticed, had flattened into discs.

The girl apparently misread his expression as curiosity. "Glass tortoise," she told him. "For win-

dows and so on. The young ones have more hump to their shells—almost spherical to start with. Those are for bottles and bowls and things."

Alvah blinked noncommittally.

THEY passed a counter on which metal tools were displayed—knives, axes and the like. Similar objects, Alvah noted automatically, had only approximately similar outlines. There seemed to be no standardization at all.

"These are local," the girl said. "The metal comes from Iron Pits, just a few miles south of here."

In the next shed was a long row of upright rectangular frames, most of them empty. One near the end, however, was filled with some sort of insubstantial film or fabric. A tiny scarlet creature was crawling rapidly up and down this gossamer substance, working its way gradually from left to right.

"Squareweb," the girl informed him. "This dress I'm wearing was made that way."

Alvah verified his previous impression that the dress was opaque. Rather a pity, since it was also quite handsomely filled out. Not, he assured himself, that it made any difference—the girl was a Muckfoot, after all.

Next came a large cleared space. In it were half a dozen

animals that resembled nothing in nature or nightmare except each other. They were wide and squat and at least six feet high at the shoulder. They had vaguely reptilian heads, and their scaly hides were patterned in orange and blue, rust and vermillion, yellow and poppy-red.

The oddest thing about them, barring the fact that each had three sets of legs, was the extraordinary series of protuberances that sprouted from their backs. First came an upright, slightly hollow shield sort of thing, set crossways behind the first pair of shoulders. Behind that, something that looked preposterously like an armchair—it even had a bright-colored cushion—and then a double row of upright spines with a wide space between them.

"Trucks," said the girl.

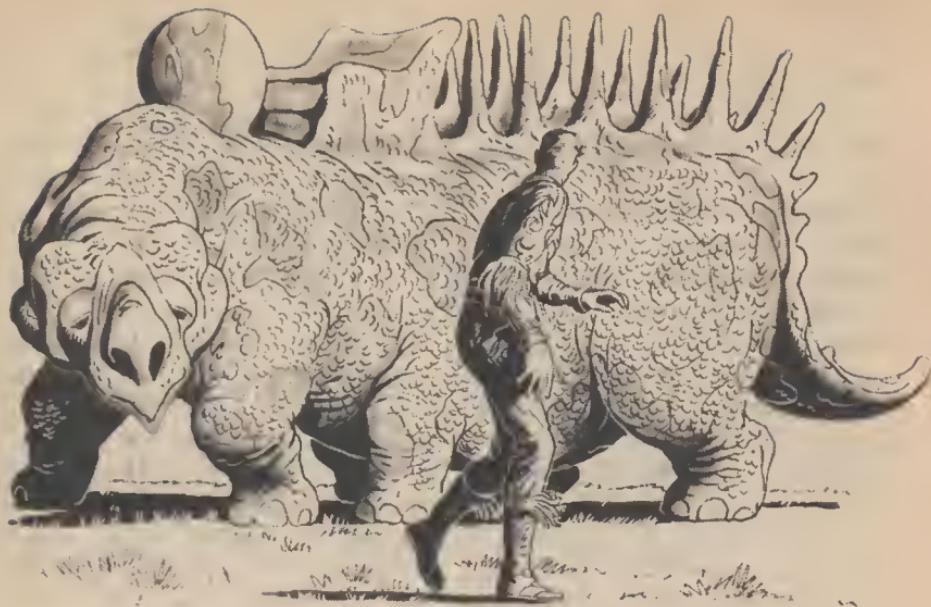
Alvah cleared his throat. "Look, Miss—"

"Betty Jane Hofmeyer. Call me B. J. Everybody does."

"All right—uh—B. J. I wonder if you could explain something to me. What's wrong with metal? And plastic, and things like that. I mean why should you people want to go to so much trouble and—and mess, when there are easier ways to do things better?"

"Each," she said, "to his own taste. We turn here."

A few yards ahead, the Fair ended and the settlement proper



began with an unusually large building—large enough, Alvah estimated, to fill almost an entire wing of a third-class hotel in New York. Unlike the hovels he had seen farther south—which looked as if they had been excreted—it was built of some regular, smooth-surfaced material, seamless and fairly well shaped.

Alvah was so engrossed in these and other considerations that it wasn't until the girl turned three steps inside the doorway, impatiently waiting, that he realized a minor crisis was at hand—he was being invited to enter a Muckfoot dwelling.

"Well, come on," said B. J.

**R**EFUSE any offers of food, transportation, etc., said the handbook, firmly, but as diplomatically as possible. Employ whatever subterfuge the situation may suggest, such as, "Thank you, but my doctor has forbidden me to touch fur," or, "Pardon me, but I have a sore throat and am unable to eat."

Alvah cleared his throat frantically. The situation did not suggest anything at all. Luckily, however, his stomach did.

"Maybe I'd better not come in," he said. "I don't feel very well. Maybe if I just sit down here quietly—"

"You can sit down inside,"

said the girl briskly. "If there's anything wrong with you, Doc will look you over."

"Well," Alvah asked desperately, "couldn't you bring him out here for a minute? I really don't think—"

"Doc is a busy man. Are you coming or not?"

Alvah hesitated. There were, he told himself, only two possibilities, after all: (a) he would somehow manage to keep his breakfast, and (b) he wouldn't.

The nausea began as a faint, premonitory twinge when he stepped through the doorway. It increased steadily as he followed B. J. past cages filled with things that chirruped, croaked, rumbled, rustled or simply stared at him. The girl didn't invite comment on any of them, for which Alvah was grateful. He was too busy concentrating on trying not to concentrate on his misery. . .

For the same reason, he did not notice at what precise point the cages gave way to long rows of potted green plants. Alvah was just beginning to wonder if he would live to see the end of them when, still following B. J., he turned a corner and came upon a cleared space with half a dozen people in it.

One of them was the sad-faced youth, Artie. Another was a stocky man, all chest and paunch and no neck at all, who was talk-

ing to Artie while the others stood and listened. B. J. stopped and waited quietly. Alvah, perforce, did the same.

"—just a few seedlings and a couple of one-year-olds for now—we'll see how they go. If you have more room later on . . . What else was I going to tell you?" The stocky man rumpled his hair nervously. "Oh, look, Artie, I had a copy of the specifications for you, but the fool bird got into a fight with a mirror and broke his . . . Wait a second." He turned abruptly. "Hello, Beej. Come along to the library for a second, will you?"

He turned again and strode off, with Artie, B. J. and Alvah in his wake.

**T**HE room they entered was, from Alvah's point of view, the worst he had struck yet. It was a hundred feet long by fifty wide, and everywhere—perched on the walls and on multi-leveled racks that ran the length of the room, darting through the air in flutters of brilliance—were tiny raucous birds, feathered in every prismatic shade, green, electric-blue, violet, screaming red.

"Mark seven one-oh-three!" Bither shouted. The roomful of birds took it up in a hideous echoing chorus. An instant later, a sudden flapping sound turned itself into an explosion of color

and alighted on the stocky man's shoulder, preening its feathers with a blunt green beak. "Rrk," it said and then, quite clearly, "Mark seven one-oh-three."

The stocky man made a perch of one forefinger and handed the thing across to Artie's shoulder. "I can't give you this one. It's the only copy I got. You'll have to listen to it and remember what you need."

"I'll remember." Artie glanced at the bird on his shoulder and said, "Magnus utility tree."

The stocky man looked around, saw B. J. "Now, Beej, is it important? Because—"

"Magnus utility tree," the bird was saying. "Thrives in all soils, over ninety-one per cent resistant to most rusts, scales and other infestations. Edible from root to branch. Young shoots and leaves excellent for salads. Self-fertilizing. Sap can be drawn in second year for—"

"Doc," said the girl clearly, "this is Alvah Gustad. From New York. Alvah, meet Doc Bither."

"—golden orangoes in spring and early summer, Bither aperies in late summer and fall. Will crossbreed with—"

"New York, huh?" said Bither. "You a long way from home, young—Excuse me. Artie?"

"—series five to one hundred fifteen. Trunks guaranteed straight and rectilinear, two-by-

four at end of second year, four-by-six at—"

"I all set, Doc."

"—mealie pods and winter-berries—"

"Fine, all right." He took B. J.'s arm. "Let's go someplace we can talk."

"—absorb fireproofing and stiffening solutions freely through roots . . ."

**B**ITHER led the way into a small, crowded room. "Now," he said, peering intently at Alvah, "what's the problem?"

B. J. explained briefly. Then they both stared at Alvah. Sweat was beaded coldly on his brow and his knees were trembling, but he seemed to have stabilized the nausea just below the critical point. The idea, he told himself, was to convince yourself that the whole building was a realie stage and all the objects in it props. Wasn't there a line to that effect in one of the classics—*The Manager of Copenhagen*, or perhaps *Have It Your Own Way*?

"What do you think?" Bither asked.

"Might try him out."

"Um. Damn it, I wish we hadn't run out of birds. Can you take this down for me, Beej? I'll arrange for the Fair rental fee, Alvah, if you just answer a few questions."

It sounded innocuous enough,

but Alvah felt a twinge of suspicion. "What kind of questions?"

"Just personal questions, like how old, what you do for a living."

"Twenty-six. I'm an actor."

"Always been an actor?"

"No."

"What else you done?"

"Labor."

"What kind?" B. J. asked.

"Worked with his hands, he means," Bither told her. "Parents laborers, too?"

"Yes."

B. J. and Bither exchanged glances. Alvah shifted uncomfortably. "If that's all . . ."

"One or two more. I want you to tell me, near as you can, when was the first time you remember knowing that our clothes and our animals and us and all the things we make smelled bad?"

It was too much. Alvah turned and lurched blindly out the door. He heard their voices behind him:

" . . . minutes."

" . . . alley door!"

Then there were hands on him, steering him from behind as he stumbled forward at a half-run. They turned him right, then left and finally he was out in the cool air, not a moment too soon.

When he straightened, wiping tears away, he was alone, but a moment later the girl appeared in the doorway.

"That's all," she said distantly.

"You can start your exhibition whenever you want."

## IV

THE magic tricks went over fairly well—at least nobody yawned. The comic monologue, however, was a flat failure, even though the piece had been expertly slanted for a rural audience and, by all the laws of psychostatics, should have rated at least half a dozen boffs. ("So the little boy came moseying back up the road, and his grandpa said to him, 'Why didn't you drive them hogs out of the corn like I told you?' And the little fellow piped up, 'Them ain't hogs—them's shoats!'")

Alvah launched hopefully into his sales talks and demonstrations.

The all-purpose fireless lifetime cooker was received with blank stares. When Alvah fried up a savory batch of protein-paste fritters and offered to hand them out, nobody responded but one small boy, and his mother hauled him down off the platform stair by the slack of his pants.

Smiling doggedly, Alvah brought out the pocket-workshop power tools and accessories. This, it appeared, was more like it. An interested hum went up as he drilled three holes of various sizes

in a bar of duroplast, then sawed through it from end to end and finally cut a mortise in one piece, a tenon in the other, and fitted them together. A few more people drifted in.

"And now, friends," said Alvah, "if you'll continue to give me your kind attention . . ."

The next item was the little giant power-plant for the home, shop or office. Blank stares again. Alvah picked out one Muckfoot in the front row—a blear-eyed, open-mouthed fellow, with hair over his forehead and a basket under his arm, who seemed typical—and spoke directly to him. He outdid himself about the safety, economy, efficiency and unobtrusiveness of a little giant power-plant. He explained its operation in words a backward two-year-old could understand.

"A little giant," he concluded, leaning over the platform rail to stare hypnotically into the Muckfoot's eyes, "is the power-plant for you!"

The fellow blinked, slowly produced a dark-brown lump of something from his pocket, slowly put it into his inattentive mouth, and as slowly began to chew.

Alvah breathed deeply and clutched the rail. "And now," he said, giving the clincher, "the marvel of the age—the super-speed runabout!" He pressed the

button that popped open a segment of the floater's hull and lowered the gleaming little two-wheeled car into view.

"Now, friends," he said, "just to demonstrate the amazing qualities of this miracle of modern science—is there any gentleman in the crowd who has an animal he fancies for speed?"

**F**OR the first time, the Muckfoot reacted according to the charts. Shouts rocketed up: "Me, by damn!" "Me!" "Right here, mister!" "Yes, sir!"

"Friends, friends!" said Alvah, spreading his hands. "There won't be time to accommodate you all. Choose one of you to represent the rest!"

"Swifty!" somebody yelped, and other voices took up the cry. A red-haired young man began working his way back out of the crowd, propelled by gleeful shouts and slaps on the back.

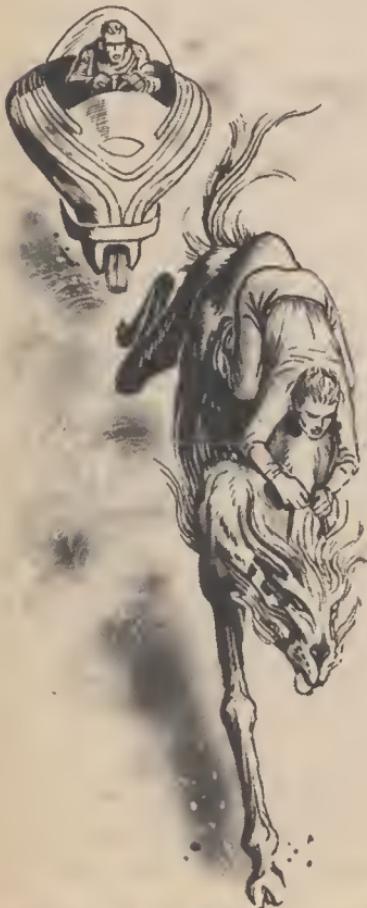
Alvah took an indicator and began pointing out the salient features of the runabout. He had not got more than a quarter of the way through when the redhead reappeared, mounted astride an animal which, to Alvah's revolted gaze, looked to be part horse, part lynx, part camel and part pure horror.

To the crowd, evidently, it was one of nature's finest efforts. Alvah swallowed bile and raised his

voice again. "Clear a space now, friends—all the way around!"

It took time, but eventually self-appointed deputies began to get the crowd moving. Alvah descended, carrying two bright marker poles, and, followed by the inquisitive redhead, set one up at either side of the enclosure, a few yards short of the boundary.

"This will be the course," he



told Swifty. "Around these markers and the floater—that thing I was standing on. We'll do ten laps, starting and finishing here. Is that all right?"

"All right with me," said the redhead, grinning more widely than before.

There were self-appointed time-keepers and starters, too. When Alvah, in the runabout, and the redhead, on his monster, were satisfactorily lined up, one of them bellowed, "On y' marks—Git set . . ." and then cracked a short whip with a noise out of all proportion to its size.

For a moment, Alvah thought Swifty and his horrid mount had simply disappeared. Then he spotted them, diminished by perspective, halfway down the course, and rapidly getting smaller. He slammed the power bar over and took off in pursuit.

**A**ROUND the first turn, it was Swifty, with Alvah nowhere. In the stretch, Alvah was coming up fast on the outside. Around the far turn, he was two monster lengths behind and, in the stretch again, they were neck and neck. Alvah kept it that way for the next two laps and then gradually pulled ahead. The crowd became a multicolored streak, whirling past him. In the sixth lap, he passed Swifty again—in the eighth, again—in the tenth, still

again—and when he skidded to a halt beyond the finish post, fluttering its flags with the wind of his passage, poor old Swifty and his steaming beast were still lumbering halfway down the stretch.

"Now, friends," said Alvah, triumphantly mounting the platform again, "in a moment, I'm going to tell you how you, yourselves, can own this wonderful runabout and many marvels more—but first, are there any questions you'd like to ask?"

Swifty pushed forward, grinning, looking like a man smitten by lightning. "How many to a get?" he called.

Alvah decided he must have misunderstood. "You can have any number you want," he said. "The price is so reasonable—but I'm going to come to that in a—"

"I don't mean how many will you sell. How many to a get?" Alvah looked blank. "How many calves, or colts, or whatever, is what I want to know."

There was a general murmur of agreement. This, it would seem, was what everybody wanted to know.

Appalled, Alvah corrected the misapprehension as quickly and clearly as he could.

"Mean to say," somebody called, "they don't breed?"

"Certainly not. If one of them ever breaks down—and, friends, they're built to last—you get it

repaired or buy another."

"How much?" somebody in the crowd yelled.

"Friends, I'm not here to take your money," Alvah said. "We just want—"

"Then how we going to pay for your stuff?"

"I'm coming to that. When two people want to trade, friends, there's usually a way. You want our products. We want metals—iron, aluminum, chromium—"

"Suppose a man ain't got any metal?"

"Well, sir, there are a lot of other things we can use besides metal. Natural fruits and vegetables, for instance."

The slack-faced yokel in the first row, the one with the basket under his arm, roused himself for the first time. His mouth closed, then opened again. "What kind?"

"Natural products, friend. You know, the kind your great-granddad ate. We use a lot every year for table delicacies, even—"

The yokel came halfway up the platform stair. His gnarled fingers dipped into the basket and came up with a smooth red-gold ovoid. He shoved it toward Alvah. "You mean," he said incredulously, "you wouldn't eat that?"

**G**ULPING, Alvah backed away a step. The Muckfoot came after him. "Raise 'em myself,"

he said plaintively, holding out the red fruit. "I tell you, they're just the juiciest, goodest — Go ahead, try one."

"I'm not hungry," Alvah said desperately. "I'm on a diet. Now if you'll just step down quietly, friend, till after the—"

The Muckfoot stared at him, holding the fruit under Alvah's nose. "You mean you won't *try* it?"

"No," said Alvah, trying not to breathe. "Now go on back down there, friend—don't crowd me."

"Well," said the Muckfoot, "then durn you!" And he shoved the disgusting thing squishly into Alvah's face.

Alvah saw red. Blinking away a glutinous film of juice and pulp, he glimpsed the yokel's face, spread into a hideous grin. Waves of laughter beat about his ears. Retching, he brought up his right fist in an instinctive roundhouse swing that clapped the yokel's grin shut and toppled him over the platform rail, basket, flying fruit and all.

The laughter rumbled away into expectant silence. Alvah fumbled in his kit for tissues, scrubbed a wad of them across his face and saw them come away daubed with streaky red. He hurled them convulsively into the crowd and, leaning over the rail, shouted thickly, "Lousy

stinking filthy *Muckfeet!*"

Muckfoot men in the front ranks turned and looked at each other solemnly. Then two of them marched up the platform stair and, behind them, another two.

Still berserk, Alvah met the first couple with two violent kicks in the chest. This cleared the stair, but he turned to find three more candidates swarming over the rail. He swung at the nearest, who ducked. The next one seized Alvah's arm with both hands and toppled over backward. Alvah followed, head foremost, and landed with a jar that shook him to his toes.

The next thing he knew, he was lying on the ground surrounded by upward of twenty thick seamless boots, choking on dust, and getting the daylights methodically kicked out of him.

Alvah rolled over frantically, climbed the first leg that came to hand, got his back against the platform and, by dint of cracking skulls together, managed in two brisk minutes to clear a momentary space around him. Another dim figure lunged at him. Alvah clouted it under the ear, whirled and vaulted over the rail onto the platform.

His gun popped out into his hand.

For just a moment, he was standing alone, feeling the pistol

grip clenched hard in his dirt-caked palm and able to judge exactly how long he had before half a dozen Muckfeet would swarm up the stair and over the rail. The crowd's faces were sharp and clear. He saw Artie and Doc Bither and Jake, his mouth open to howl, and he saw the girl, B. J., in a curious posture—leaning forward, her right arm thrust out and down. She had just thrown something at him.

**A**LVAH saw the gray-white blur wobbling toward him. He tried to dodge, but the thing struck his shoulder and exploded with a papery pop. For a bewildering instant, the air was full of dancing bright particles. Then they were gone.

Alvah didn't have time to wonder about it. He thumbed the selector over to *Explosive*, pointed the gun straight up and squeezed the trigger.

Nothing happened.

There were two Muckfeet half over the rail and three more coming up the stair. Incredulous, still aiming at the air, Alvah tried again—and again. The gun didn't work.

Three Muckfeet were on the platform, four more right behind them. Alvah spun through the open door and slapped at the control button. The door stayed open.

The Muckfeet were massed in the doorway, staring in like visitors at an aquarium. Alvah dived at the power bar, shoved it over. The floater didn't lift.

"*Holly! Luke!*" called a clear voice outside, and the Muckfeet turned. "Leave him alone. He's got enough troubles now."

Alvah was pawing at the control board.

The lights didn't work.

The air-conditioner didn't work.

The scent-organ didn't work.

The musivox didn't work.

One of the Muckfeet put his head in at the door. "Reckon he has," he said thoughtfully and went away again. Alvah heard his voice, more faintly. "You do something, B. J.?"

"Yes," said the girl, "I did something."

**M**OVING warily, Alvah went outside. The girl was standing just below the platform, watching as the Muckfoot men filed down the stair.

"*You!*" he said to her.

She paid him no attention. "Just one of those things, Luke," she said.

Luke nodded solemnly. "Well, the Fair don't come but once a year." He and the other men moved past her into the crowd, each one acquiring a train of curiosity-seekers as he went. The

crowd began to drift away.

A familiar voice yelped, "Ride'm out on a razorback is what I say!"

A chorus of "Now, Jake!" went up. There were murmurs of dissent, of inquiry, of explanation. "Time for the poultry judging!" somebody called, and the crowd moved faster.

Alvah went dazedly down and climbed into the runabout. He wagged its power bar. No response.

He tore open his kit and began frantically hauling out one glittery object after another, holding each for an instant and then throwing it on the ground. The razor, the heater, the vacuum cleaner, the sonotube, the vibromasseur.

Swifty rode by, at ease atop his horse-lynx-camel-horror. He was whistling.

The crowd was almost gone. Among the stragglers was Jake, fists on his pudgy hips, his choleric cheeks gleaming with sweat and satisfaction.

"Well, Mister High-and-Mighty," he called, "what are you going to do now?"

That was just what Alvah was wondering. He was about a thousand miles from home by air—probably more like fifteen hundred across-country. He had no transportation, no shelter, no power tools, no equipment. He

had, he realized with horror, been cut off instantly from everything that made a man civilized.

What was he going to do?

..  
V

**M**ANAGER Wytak had his feet on the glossy desktop. So did the Comptroller, narrow-faced old Mr. Creedy; the Director of Information, plump Mr. Kling; the Commissioner of Supply, blotched and pimpled Mr. Jackson; and the porcine Mr. McArdle, Commissioner of War. With chairs tilted back, they stared through a haze of cigar smoke at each others' stolid faces mirrored on the ceiling.

Wytak's voice was as confident as ever, if a trifle muted, and when the others spoke, he listened. These were not the hired nonentities Alvah had seen; these were the men who had made Wytak, the electorate with whose consent he governed.

"Jack," said Wytak, "I want you to look at it my way and see if you don't think I'm right. It isn't a question of how long we can hold out—when you get right down and look at it, it's a question of *can we do anything*."

"In time," said Jackson expressionlessly.

"In time. But if we can do anything, there'll be time enough. You say we've got troubles now

and you're right, but I tell you we can pull through a situation a thousand times worse than this—if we've got an answer. And have we got an answer? We have."

Creedy grunted. "Like to see some results, Boley."

"You'll see them. You can't skim a yeast tank the first day, Will."

"You can see the bubbles, though," said Jackson sourly. "Any report from this Gustad today, while we're talking about it?"

"Not yet. He was getting some response yesterday. He's following it up. I trust that boy—the analyzers picked his card out of five million. Wait and see. He'll deliver."

"If you say so, Boley."

"I say so."

Jackson nodded. "That's good enough. Gentlemen?"

**I**N another soundproof, spy-proof office in Over Manhattan, Kling and McArdle met again twenty minutes later.

"What do you think?" asked Kling with his meaningless smile.

"Moderately good. I was hoping he would lie about Gustad's report, but of course there was very little chance of that. Wytak is an old hand."

"You admire him?" Kling suggested.

"As a specimen of his type.

Wytak pulled us out of a very bad spot in '39."

"Agreed."

"And he has had his uses since then. There are times when brilliant improvisation is better than sound principles — and times when it is not. Wytak is an incurable romantic."

"And you?"

"We," said McArdle grimly, "are realists."

"Oh, yes. But perhaps we are not anything just yet. Creedy is interested, but not convinced—and until he moves, Jackson will do nothing."

"Wytak's project is a failure. You can't do business with the Muckfeet. But the fool was so confident that he didn't even interfere with Gustad's briefing."

Kling leaned forward with interest. "You didn't . . . ?"

"No. It wasn't necessary. But it means that Gustad has no instructions to fake successful reports—and that means Wytak can't stall until he gets back. There was no report today. Suppose there's none tomorrow, or the next day, or the next."

"In that case, of course . . . However, it's always as well to offer something positive. You said you might have something to show me today."

"Yes. Follow me."

In a sealed room at the end of a guarded corridor, five young

men were sitting. They leaped to attention when Kling and McArdle entered.

"At ease," said McArdle. "This gentleman is going to ask you some questions. You may answer freely." He turned to Kling. "Go ahead—ask them anything."

Kling's eyebrows went up delicately, but he looked the young men over, selected one and said, "Your name?"

"Walter B. Limler, sir."

Kling looked mildly pained. "Please don't call me sir. Where do you live?"

"CFF Barracks, Tier Three, McCormick."

"CFF?" said Kling with a frown. "McCormick? I don't place the district. Where is it?"

The young man, who was blond and very earnest, allowed himself to show a slight surprise. "In the Loop," he said.

"And where is the Loop?"

The young man looked definitely startled. He glanced at McArdle, moistened his lips and said, "Well, right here, sir. In Chicago."

Kling's eyebrows went up and then down. He smiled. "I begin to see," he murmured to McArdle. "Very clever."

IT cost Alvah two hours' labor, using tools that had never been designed to be operated manually, to get the inspection

plate off the motor housing in the floater. He compared the intricate mechanism with the diagrams and photographs in the maintenance handbook. He looked for dust and grime; he checked the moving parts for play; he probed for dislodged wiring plates and corrosion. He did everything the handbook suggested, even spun the flywheel and was positive he felt the floater lift a fraction of an inch beneath him. As far as he could tell, there was absolutely nothing wrong, unless the trouble was in the core of the motor itself—the force-field that rotated the axle that made everything go.

The core casing had an "easily removable" segment, meaning to say that Alvah was able to get it off in three hours more.

Inside, there was no resistance to his cautious finger. The spool-shaped hollow space was empty.

Under *Motor Force-field Inoperative* the manual said simply: *Remove and replace rhodium-palladium nodules.*

Alvah looked. He found the tiny sockets where the nodules ought to be, one in the flanged axle-head, the other facing it at the opposite end of the chamber. The nodules were not there at all.

Alvah went into the storage chamber. Ignoring the increasingly forceful protests of his emp-

ty stomach, he spent a furious twenty minutes locating the spare nodules. He stripped the seal off the box and lifted the lid with great care.

There were the nodules. And there, appearing out of nowhere, was a whirling cloud of brightness that settled briefly in the box and then went back where it came from. And there the nodules were gone.

Alva stared at the empty box. He poked his forefinger into the cushioned niches, one after the other. Then he set the box down with care, about-faced, walked outside to the platform and sat down on the top step with his chin on his fists.

"You look peaked," said B. J.'s firm voice.

Alvah looked up at her briefly. "Go away."

"Had anything to eat today?" the girl asked.

Alvah did not reply.

"Don't sulk," she said. "You've got a problem. We feel responsible. Maybe there's something we can do to help."

Alvah stood up slowly. He looked her over carefully, from top to bottom and back again. "There is one thing you could do for me," he said. "Smile."

"Why?" she asked cagily.

"I wanted to see your fangs." He turned wearily and went into the floater.

HE puttered around for a few minutes, then got cold rations out of the storage chamber and sat down in the control chair to eat them. But the place was odious to him with its gleaming, useless array of gadgetry, and he went outside again and sat down with his back to the hull near the doorway. The girl was still there, looking up at him.

"Look," she said, "I'm sorry about this."

The nutloaf went down his gullet in one solid lump and hit his stomach like a stone. "Please don't mention it," he said bitterly. "It was really nothing at all."

"I had to do it. You might have killed somebody."

Alvah tried another bite. Chewing the stuff, at any rate, gave him something to do. "What were those things?" he demanded.

"Metallophage," she said. "They eat metals in the platinum family. Hard to get them that selective—we weren't exactly sure what would happen."

Alvah put down the remnant of nutloaf slowly. "Who's 'we'? You and Bither?"

"Mostly."

"And you — you bred those things to eat rhodopalladium?"

She nodded.

"Then you must have some to feed them," said Alvah logically. He stood up and gripped the

railing. "Give it to me."

She hesitated. "There might be some—"

"Might be? There *must* be!"

"You don't understand. They don't actually eat the metal—not for nourishment, that is."

"Then what do they do with it?"

"They build nests," she told him. "But come on over to the lab and we'll see."

At the laboratory door, they were still arguing. "For the last time," said Alvah, "I will not come in. I've just eaten half a nutcake and I haven't got food to waste. Get the stuff and bring it out."

"For the last time," said B. J., "get it out of your head that what you want is all that counts. If you want me to look for the metal, you'll come in, and that's flat."

They glared at each other. Well, he told himself resignedly, he hadn't wanted that nutloaf much in the first place.

They followed the same route, past the things that chirruped, croaked, rumbled, rustled. The main thing, he recalled, was to keep your mind off it.

"Tell me something," he said to her trim back. "If I hadn't got myself mixed up with that farmer and his market basket, do you still think I wouldn't have sold anything?"

"That's right."

"Well, why not? Why all this resistance to machinery? Is it a taboo of some kind?"

**S**HE said nothing for a moment.

"Is it because you're afraid the Cities will get a hold on you?" Alvah insisted. "Because that's foolish. Our interests are really the same as yours. We don't just want to sell you stuff—we want to help you help yourselves. The more prosperous you get, the better for us."

"It's not that," she said.

"Well, what then? It's been bothering me. You've got all these raw materials, all this land. You wouldn't have to wait for us—you could have built your own factories, made your own machines. But you never have. I can't understand why."

"It's not worth the trouble."

He choked. "Anything is worth the trouble, if it helps you do the same work more efficiently, more intel—"

"Wait a minute." She stopped a woman who was passing in the aisle between the cages. "Marge, where's Doc?"

"Down in roundworms, I think."

"Tell him I have to see him, will you? It's urgent. We'll wait in here." She led the way into a windowless room, as small and cluttered as any Alvah had seen.

"Now," she said. "We don't make a fuss about machines because most people simply haven't any need for them."

"That's ridiculous," Alvah argued. "You may think—"

"Be quiet and let me finish. We haven't got centralized industries or power installations. Why do you think the Cities have never beaten us in a war, as often as they've tried? Why do you think we've taken over the whole world, except for twenty-two Cities? You've got to face this sooner or later—in every single respect, *our plants and animals are more efficient than any machine you could build.*"

Alvah inspected her closely. Her eyes were intent and brilliant. Her bosom indicated deep and steady breathing. To all appearance, she was perfectly serious.

"Nuts," he replied with dignity.

**B.J.** shook her head impatiently. "I know you've got a brain. Use it. What's the most expensive item that goes into a machine?"

"Metal. We're a little short of it, to tell the truth."

"Think again. What are all your gadgets supposed to save?"

"Well, labor."

"Human labor. If metal is expensive, it's because it costs a lot of man-hours."

"If you want to look at it that way—"

"It's true, isn't it? Why is a complicated thing more expensive than a simple one? More man-hours to make it. Why is a rare thing more expensive than a common one? More man-hours to find it. Why is a—"

"All right, what's your point?"

"Take your runabout. You saw that was the thing that interested people most, but I'll show you why you never could have sold one. How many man-hours went into manufacturing it?"

Alvah shifted restlessly. "It isn't in production. It's a trade item."

She sniffed. "Suppose it was in production. Make an honest guess. Figure in everything—amortization on the plant and equipment, materials, labor and so on. You can check your answer against wages and prices in your own money—you'll come pretty close."

Alvah reflected. "Between seven-fifty and a thousand."

"Compare that with Swift's Morgan Gamma—the thing you raced against. Two man-hours—just two, and I'm being generous."

"Interesting," said Alvah, "if true." He suppressed an uneasy belch.

"Figure it out. An hour for the vet when he was foaled. Call it

another hour for amortization on the stable where it happened, but that's too much. It isn't hard to grow a stable and they last a long time."

Alvah, who had been holding his own as long as machines were the topic, wasn't sure he could keep it up—or, more correctly, down. "All right, two hours," he said. "The animals feed themselves and water themselves, no doubt."

"They do, but that comes under upkeep. Our animals forage, most of them—all the big ones. The rest are cheap and easy to feed. Your machines have to be fueled. Our animals repair themselves, like any living organism, only better and faster. Your machines have to be repaired and serviced. More man-hours. Incidentally, if you and Swifty took a ten-hour trip, you in your runabout, him on his Morgan, you'd spend just ten hours steering. Swifty would spend maybe fifteen minutes all told. And now we come to the payoff—"

"Some other time," said Alvah irritably.

"This is important. When your runabout—"

"I'd rather not talk about it any more," said Alvah, raising his voice. "Do you *mind*?"

"When your runabout breaks down and can't be fixed," she said firmly, "you have to buy

another. Swifty's mare drops twins every year. There. Think about it."

**T**HE door opened and Bither came in, looking more disheveled than ever. "Hello, Beej, Alvah. Beej, I think we shoulda used annelid stock for this job. These  $F_3$  batches no good at—you two arguing?"

Alvah recovered himself with an effort. "Rhodopalladium," he said thickly. "I need about a gram. Have you got it?"

"Not a scrap," said Bither cheerfully. "Except in the nests, of course."

"I told him I didn't think so," B. J. said.

Alvah closed his eyes for a second. "Where," he asked carefully, "are the nests?"

"Wish I knew," Bither admitted. "It's frustrating as hell. You see, we had to make them awful small and quick, the metallocophage. Once you let them out of the sacs, there's no holding them. We did so good a job, we can't check to see how good a job we did." He rubbed his chin thoughtfully. "Of course, that's beside the point. Even if we had the metals, how would you get the alloy you need?"

"Palladium," said the girl, "melts at fifteen fifty-three Centigrade. I asked the hand bird."

"Best we can get out of a sala-

mander is about six hundred," Bither added. "Isn't good for them, either — they get esophagitis."

"And necrosis," the girl said, watching Alvah intently.

His eyes were watering. It was hard to see. "Are you telling—"

"We're trying to tell you," she said, "that you can't go back. You've got to start getting used to the idea. There isn't a thing you can do except settle down here and learn to live with us."

Alvah could feel his jaw working, but no words were coming out. The bulge of nausea in his middle was squeezing its way inexorably upward.

Somebody grabbed his arm. "In there!" said Bither urgently.

A door opened and closed behind him, and he found himself facing a hideous white-porcelain antique with a pool of water in it. There was a roaring in his

ears, but before the first spasm took him, he could hear the girl's and Bither's voices faintly from the other room:

"Eight minutes that time."

"Beej, I don't know."

"We can do it!"

"Well, I suppose we can, but can we do it before he starves?"

There was a sink in the room, but Alvah would sooner have drunk poison. He fumbled in his disordered kit until he found the condenser canteen. He rinsed out his mouth, took a tonus capsule and a mint lozenge. He opened the door.

"Feeling better?" asked the girl.

Alvah stared at her, retched feebly and fled back into the washroom.

**WHEN** he came out again, Bither said, "He's had enough, Beej. Let's take him out



in the courtyard till he gets his strength back."

They moved toward him. Alvah said weakly, but with feeling, "Keep your itchy hands off me." He walked unsteadily past them, turned when he reached the doorway. "I hate to urp and run, but I'll never forget your hospitality. If there's ever anything I can do for you—anything at all—please hesitate to call on me."

He heard muttering voices and an odd scraping sound behind him, but he didn't look back. He was halfway down the aisle between the cages when something furry and gray scuttled into view and sat up, grinning at him.

It looked like an ordinary capuchin monkey except for its head, which was grotesquely large. "Go away," said Alvah. He advanced with threatening gestures. The thing chattered at him and stayed where it was.

The aisle behind him was deserted. Very well, there were other exits. Alvah followed his nose back into the plant section and turned right.

There was the monkey-thing again.

At the next intersection of aisles, there were two of them. Alvah turned left.

And right.

And left.

And emerged into a large empty space enclosed by buildings.

"This is the courtyard," said Bither, coming forward with the girl behind him. "Now be reasonable, Alvah. You want to get back to New York, don't you?"

This did not seem to call for comment. Alvah stared at him in silence.

"Well," said Bither, "there's just one way you can do it. It won't be easy—I don't even say you got more than a fighting



chance. One thing, though—it's up to you just how hard you make it for yourself."

"Get to the point," Alvah said.

"You got to let us decondition you so you can eat our food, ride on our animals. Now *think* about it, don't just—"

Alvah swung around, looking for the fastest and most direct exit. Before he had time to find it, a dizzying thought struck him and he turned back.

"Is that what this whole thing has been about?" he challenged. He glared at Bither, then at B. J. "Is that the reason you were so helpful? *Did you engineer that fight?*"

**B**ITHER clucked unhappily. "Would we admit it if we did? Alvah, I'll admit this much—of course we interested in you for our own reasons. This is the first time in thirty years we had a chance to study a City man. But what I just told you is true. If you want to get back home, this is your only chance."

"Then I'm a dead man," said Alvah.

"You is if you think you is," Bither told him. "Beej, you try."

She looked at Alvah levelly. "You think what we suggesting isn't possible. Right?"

"Discounting Doc's grammar," Alvah said sourly, "that's exactly what I'm thinking."

She said, "Doc's grammar is all right—yours is sixty years out of date. But I guess you already realize that your people are backward compared to us."

Half angry, half curious, Alvah demanded, "Just how do you figure that?"

"Easy. You probably don't know much biology, but you must know this much. What's the one quality that makes human beings the dominant race on this planet?"

Alvah snorted. "Are you trying to tell me I'm not as bright as a Muckfoot?"

"Not intelligence. Try again. Something more general—intelligence is only a special phase of it."

Alvah's patience was narrowing to a thin and brittle thread. "You tell me."

"All right. We like to think intelligence is important, but you can't argue that way. It's special pleading—the way a whale might argue that size is the measuring stick, or a microbe might say numbers. But—"

"Control of environment," Alvah said.

"Right. Another name for it is adaptability. No other organism is so independent of environment, so adaptable as Man. And we could live in New York if we had to, just as we can live in the Arctic Circle or the tropics. And,

since you don't dare even try to live here . . ."

"All right," Alvah said bitterly. "When do we start?"

## VI

**H**E refused to be hypnotized. "You promised to help," B. J. said in annoyance. "We can't break the conditioning till we find out how it was done, you big oaf!"

"The whole thing is ridiculous anyhow," Alvah pointed out. "I said I'd let you try and I will—you can prod me around to your heart's content — but not that. I've put in a lot of Required Contribution time in restricted laboratories. Military secrets. How do I know you wouldn't ask me about those if you got me under?"

"We're not *interested* in—" B. J. began furiously, but Bither cut her off.

"We is, though, Beej. Might be important for us to know what kind of defenses New York has built up, and I going to ask him if I got the chance." He sighed. "Well, there other ways to skin a glovebeast. Lean back and relax, Alvah."

"No tricks?" Alvah asked suspiciously.

"No, we just going to try to improve your conscious recall. Relax now; close your eyes. Now

think of a room, one that's familiar to you, and describe it to me. Take your time . . . Now we going further back—further back. You three years old and you just dropped something on the floor. What is it?"

Bither seemed to know what he was doing, Alvah had to admit. Day after day they dredged up bits and scraps of memory from his childhood, events he had forgotten so completely that he would almost have sworn they had never happened. At first, all of them seemed trivial and irrelevant, but even so, Alvah found, there was an unexpected fascination in this search through the dusty attics of his mind. Once they hit something that made Bither sit up sharply — a dark figure holding something furry, and an accompanying remembered stench.

Whether or not it had been as important as Bither seemed to think, they never got it back again. But they did get other things—an obscene couplet about the Muckfeet that had been popular in P. S. 9073 when Alvah was ten; a scene from a realie feature called *Nix on the Stix*; a whispered horror story; a frightening stereo picture in a magazine.

"What we have to do," B. J. told him at one point, "is to make you realize that none of this was your own idea. They *made* you

feel this way. They did it to you."

"Well, I know that," said Alvah.

She stared at him in astonishment. "You knew it all along—and you don't care?"

"No." Alvah felt puzzled and irritated. "Why should I?"

"Don't you think they should have let you make up your own mind?"

Alvah considered this. "You have to make your children see things the way you do, otherwise there wouldn't be any continuity from one generation to the next. You couldn't keep any kind of civilization going. Where would we be if we let people wander off into the Sticks and become Muckfeet?"

**H**E finished triumphantly, but she didn't react properly. She merely grinned with an exasperating air of satisfaction and said, "Why should they want to—unless we can give them a better life than the Cities can?"

This was absurd, but Alvah couldn't find the one answer that would flatten her, no matter how long and often he mulled it over. Meanwhile, his tolerance of Muckfoot dwellings progressed from ten minutes to thirty, to an hour, to a full day. He didn't like it and nothing, he knew, could ever make him like it, but he could stand it. He was able to

ride for short distances on Muckfoot animals, and he was even training himself to wear an animal-hide belt for longer and longer periods each day. But he still couldn't eat Muckfoot food—the bare thought of it still nauseated him—and his own supplies were running short.

Oddly, he didn't feel as anxious about it as he should have. He could sense the resistance within him softening day by day. He was irrationally sure that that last obstacle would go, too, when the time came. Something else was bothering him, something he couldn't even name — but he dreamed of it at night and its symbol was the threatening vast arch of the sky.

After the Fair was over, it seemed that B. J. had very little work to do. As far as Alvah could make out, the same was true of everybody. The settlement grew mortuary-still. For an hour or so every morning, lackadaisical trading went on in the central market place. In the evenings, sometimes, there was music of a sort and a species of complicated ungainly folk-dancing. The rest of the time, children raced through the streets and across the pastures, playing incomprehensible games. Their elders, when they were visible, sat—on doorsteps by ones and twos, grouped on porches and lawns — their

hands busy, oftener than not, with some trifle of carving or needlework, but their faces as blank and sleepy as a frog's in the Sun.

"What do you do for excitement around here?" he asked B. J. in a dither of boredom.

She looked at him oddly. "We work. We make things, or watch things grow. But maybe that's not the kind of excitement you mean."

"It isn't, but let it go."

"Our simple pleasures probably wouldn't interest you," she said reflectively. "They're pretty dull. We dance, go riding, swim in the lake . . ."

So they swam.

IT wasn't bad. It was unsettling to have no place to swim to—you had to head out from the shore, gauging your distance, and then turn around to go back—but the lake, to Alvah's considerable surprise, was clearer and better-tasting than any pool he'd ever been in.

Lying on the grass afterward was a novel sensation, too. It was comfortable—no, it was nothing of the sort; the grass blades pricked and the ground was lumpy. Not comfortable, but—comforting. It was the weight, he thought lazily, the massive mother-weight of the whole Earth cradling you—the endless slow

pendulum-swing you felt when you closed your eyes.

He sat up, feeling cheerfully torpid. B. J. was lying on her back beside him, eyes shut, one arm flung back behind her head. It was a graceful pose. In a detached way, he admired it, first in general and then in particular—the fine texture of her skin, the firmness of her bosom under the halter that half-covered it, the delicate tint of her closed eyelids—the catalogue prolonged itself, and he realized that B. J., when you got a good look at her, was a uniquely lovely girl. He wondered, in passing, how he had missed noticing it before.

She opened her eyes and looked at him. There was a ground-swell of some sort and, without particular surprise, Alvah found himself leaning over and kissing her.

"Beej," he said some time later, "when I go back to New York—I don't suppose you'd want to come with me? I mean—you're different from the others. You're educated, you can read; even your grammar is good."

"I know you mean it as a compliment and I'm doing my best not to sound ungrateful or hurt your feelings, but . . ." She made a frustrated gesture. "Take the reading—that's a hobby of Doc's and I picked it up from him. It's

a primitive skill, Alvah, something like manuscript illuminating. We have better ways now. We don't need it any more. Then the grammar — didn't it ever strike you that I might be using your kind just to make things easier for you?"

She frowned. "I guess that was a mistake. As of now, I quit. No, listen a minute! The only difference between your grammar and ours is that yours is sixty years out of date. You still use 'I am, you are, he is' and all that archaic nonsense of tenses, case and gender. What for? If that's good, suppose we hunted up somebody who said 'I am, thou art, he is,' would his grammar be better than yours?"

"Well—" said Alvah.

"And about New York, I appreciate that. But the Cities are done for, Alvah. In ten years there won't be one left. They're finished."

**A**LVAH stiffened. "That's the most ridiculous—"

"Is it? Then why are you here?"

"Well, we're in a crisis period now, but we've come through them before. You can't—"

"This crisis of yours started a long while ago. If I remember, it was around 1927 that Muller first changed the genes in fruit flies with X-ray bombardment. That

was the first step—over a hundred years before you were even born. Then came colchicine and the electron microscope and microsurgery, all in the next thirty years. But the day biological engineering really grew up—1962, Jenkins' and Scripture's gene charts and techniques—the Cities began to go. Little by little, people drifted out to the land again, raising the new crops, growing the new animals.

"The big Cities cannibalized the little ones, like an insect eating its own body when its food supply runs out. Now that's gone as far as it can, and you think it's just another crisis, but it isn't. It's the end."

Alvah heard a chill echo of Wytak's words: "*Rome fell. Babylon fell. The same thing can happen to New York . . .*"

He said, "What am I supposed to be, the rat that leaves the sinking ship?"

She sighed. "Alvah, you got a better brain than that."

"You don't have to think in metaphors or slogans, like a moron. I'm not asking you to join the winning side. That doesn't matter. In a few years there won't be but one side, no matter which way you jump."

"What do you want then?" he asked.

She looked dispirited. "Nothing, I guess. Let's go home."

IT was a series of little things after that. There was the time he and Beej, out walking in the cool of the morning, stopped to rest at an isolated house that turned out to be occupied by George Allister of the Coffin clan, the shy little man who'd tried to show Alvah how to make his marks the day he landed.

George, Alvah believed — and questioning of Beej afterward confirmed it—was about as low on the social scale as a Muckfoot could get. But he was his own master. He had a wife and three children and neat fields, with his own animals grazing in them. His house was big and cool and clean. He poured them lemonade — which Alvah wistfully had to decline—from a sweating peacock-blue pitcher, while sitting at his ease on the broad front porch.

There were no servants among the Muckfeet. Alvah remembered an ancient fear of his, something that had cropped up in the old days every time he got seriously interested in a girl—that his children, if any, might relapse into the labor-pool category from which he had risen or—it was hard to say which would be worse—into the servants' estate.

He went back from that outing very silent and thoughtful.

There was the time, a few days later, when Beej was working,

and Alvah, at loose ends, wandered into a room in the laboratory building where two of Bither's assistants, girls he knew by sight, were sitting with two large, leathery-woody, pod-shaped boxes open on the bench between them.

Being hungry for company and preoccupied with himself at the same time, he didn't notice what should have been obvious, that the girls were busy at something private and personal. Even when they closed the boxes between them, he wasn't warned. "What's this?" he said cheerfully. "Can I see?"

They glanced at each other uncertainly. "These is our bride boxes," said the brunette. "We don't usual show them to singletons—"

They exchanged another glance.

"He's spoke for anyhow," said the redhead, with an enigmatic look at Alvah.

They opened the boxes. Inside each was a multitude of tiny compartments, each with a bit of something wrapped in cloth or paper tissue. The brunette chose one of the largest and unwrapped it with exaggerated care — an amorphous reddish-brown lump.

"Houseplant," she said, and wrapped it up again.

The redhead showed him a vial full of minuscule white spheres. "Weaver eggs. Two hun-

dred of them. That's a lot, but I like more curtains and things than most."

"Wait a minute," said Alvah, perplexed. "What does a house-plant do?"

"Grow a house, of course," the brunette said. She held up another vial full of eggs. "Scavengers."

The redhead had a translucent sac with dark specks in it. "Utility trees."

"Garbage converter."

"This grows into a bed and these is chairbushes."

And so on, interminably, while the girls' eyes glittered and their cheeks flushed with enthusiasm.

THE boxes, Alvah gathered, contained the germs of everything that would be needed to set up a Muckfoot household — beginning with the house itself. A thought struck him: "Does Beej have one of these outfits?"

Wide-eyed stares from both girls. "Well, of course!"

Alvah shifted uncomfortably. "Funny, she never mentioned it."

The girls exchanged another of those enigmatic glances and said nothing. Alvah, for some reason, grew more uncomfortable still. He tried once more. "What about the man—doesn't he have to put up anything?"

Yes, the man was expected to supply all the brutes and the seeds for outbuildings and all the

crops except the bride's kitchen-garden. Everything in and around the home was her province, everything outside was his.

"Oh," said Alvah.

"But if a young fellow don't have all that through no fault of his own, his clan put up for him and let him pay back when he able."

"Ah," said Alvah and turned to make his escape.

The redhead called after him, "You thought any about what clan you like to get adopted into, Alvah?"

"Uh, no," said Alvah. "I don't think—"

"You talk to Doc Bither. He a elder of the Steins. Mighty good clan!"

Alvah bolted.

Then there was the Shakespeare business. It began in his third week in the Sticks, when he was already carrying a fleshy Muckfoot vegetable around with him—a radnip, B. J. called it. He hadn't had the nerve yet to bite into it, but he knew the time was coming when he would. Beej came to him and said, "Alvah, the Rinaldos' drama group is doing *Hamlet* next Saturday, and they're short a Polonius. Do you think you could study it up by then?"

"What's *Hamlet*? And who's Polonius?"

She got the bird out of the li-

brary for him and he listened to the play, which turned out to be an archaic version of *The Manager of Copenhagen*. The text was nothing like the modernized abridgment he was used to, or the Muckfeet's slovenly speech either. It was full of words like *down-gyved* and *unkennel*. It was three-quarters incomprehensible until he began to get the hang of it, but it had a curious power. *For who would bear the whips and scorns of time, the oppressor's wrong, the proud man's contumely, the pangs of despised love*, and so on and so on. It rumbled, but it rumbled well.

**P**OLONIUS, however, was the character Alvah knew as Paul Arnson, an inconsequential old man who only existed in the play to foul up the love affair between the principals and got killed in the third act. Alvah ventured to suggest that he might be of more use as Hamlet, but the director, a dry little man with a surprising boom to his voice, stubbornly insisted that all he needed was a Polonius—and seemed to intimate, without actually saying so, that Alvah was a dim prospect even for that.

Alvah, with blood in his eye, accepted the part.

The rehearsals were a nightmare. The lines themselves gave him no trouble—Alvah was a

quick study; in the realies, you had to be—and neither, at first, did the rustic crudity of the stage he was asked to perform on. Letter-perfect when the other actors were still stuttering and blowing their lines, he walked through the part with quiet competence and put the director's sour looks down to a witless hayseed hostility—until, three days before the performance, he suddenly awoke to the realization that everyone else in the cast was acting rings around him.

This wasn't the realies. There were no microphones to amplify his voice, no cameras to record every change in his expression. And the audience, what there was of it, was going to be right—out—there.

Alvah went to pieces. Trying to emulate the others' wide gestures and declamatory delivery only threw him further off his stride. He had never had stage-fright in his life, but by curtain time on Saturday night, he was a pale and quivering wreck.

Dead and dragged off the stage at the end of act three, he got listlessly back into his own clothes and headed for an inconspicuous exit, but the director waylaid him. "Gustad," he said abruptly, "you ever thought of yourself as a professional actor?"

"I had some such idea at one time," Alvah said. "Why?"

"Well, I don't see why you shouldn't. If you work at it. I never see a man pick up so fast."

"What?" cried Alvah, thunderstruck.

"You wasn't bad," said the director. "A few rough edges, but a good performance. Now I happen to know some people in a few repertory companies—the Mondrillo Troupe, the Kalfoglou Repertory, one or two more. If you interested, I'll bird them and see if there's an opening. Don't thank me, don't thank me." He moved off a few steps, then turned. "Oh, and, Gustad—get back into your costume, will you?"

"Uh," said Alvah. "But I'm dead. I mean—"

"For the curtain calls," said the director. "You don't want to miss those." He waved and walked back into the wings.

Alvah absently drew out his radnip and crunched off a bite of it. The taste was faintly unpleasant, like that of old protein paste or the wrong variety of culture-cheese, but he chewed and swallowed it.

THAT was when he realized that he had to get out. He didn't put on his costume again. Instead, he rummaged through the property boxes until he found an old pair of moleskin trousers and a stained squareweb shirt. He put them on, left by the rear

door and headed south.

South for two reasons. First, because, he hoped, no one would look for him in that direction. Second, because he remembered what Beej had said that first day when they passed the display of tools: "*The metal comes from Iron Pits, just a few miles south of here.*"

There might be some slender chance still that he could get the metal he needed, delouse the floater and go home in style—without the painful necessity of explaining to Wytak what had happened to the floater and all his goods and equipment. If not, he would simply keep on walking.

He had to do it now. He had almost waited too long as it was.

They had laid out the pattern of a life for him—to marry Beej, settle down in a house that would grow from a seed Beej kept in a pod-shaped box, be a rustic repertory actor, raise little Muckfeet. And the devil of it was, some unreasonable part of him wanted all of that!

A good thing he hadn't stayed for the curtain calls . . .

The Sun declined as he went, until he was walking down a ghost-dim road under the stars, with all the cool cricket-shrill world to himself.

He spent the night uncomfortably huddled under a hedge. Birds woke him with a great

clamor in the tree-tops shortly after dawn. He washed himself and drank from a stream that crossed the fields, ate a purplish-red fruit he found growing nearby, then moved on.

Two hours later, he topped a ridge and found his way barred by a miles-long shallow depression in the Earth. Like the rest of the visible landscape, it was filled with an orderly checker-work of growing plants.

There was nothing for it but to go through if he could. But surely he had gone more than "a few miles" by now?

The road slanted down the embankment to a gate in a high thorn hedge. Behind the gate was a kind of miniature domed kiosk and, in the kiosk, a sunburned man was dozing with a green-and-purple bird on his shoulder.

Alvah inspected a signboard that was entangled somehow in the hedge next to the gate. He was familiar enough by now with the Muckfeet's picture-writing to be fairly sure of what it said. The first symbol was a nail with an ax-head attached to it. That was *iron*. The second was a few stylized things that resembled fruit seeds. *Pits?*

**H**E stared through the gate in mounting perplexity. You might call a place like this "Pits," all right, but imagination boggled

at calling it a mine. Still . . .

The kiosk, he noticed now, bore a scrawled symbol in orange pigment. He recognized that one, too; it was one of the common name-signs.

"Jerry!" he called.

"Rrk," remarked the bird on the sleeping man's shoulder. "Kerry brogue; but the degradation of speech that occurs in London, Glasgow—"

"Oh, damn!" said Alvah. "You, there. *Jerry!*"

"Rrk. Kerry brogue; but the—"

"Jerry!"

"Kerry brogue!" shrieked the bird. The sunburned man sat up with a start and seized it by the beak, choking it off in the middle of "degradation."

"Oh, hello," he said. "Don't know what it is about a Shaw bird, but they all alike. Can't shut them up."

"I'd like," said Alvah, "to look through the—uh—Pits. Would that be all right?"

"Sure," the man said cheerfully. He opened the gate and led the way down a long avenue between foot-high rows of plants.

"I Jerry Finch," he said. "Littleton clan. Don't believe you said your name."

"Harris," Alvah supplied at random. "I visiting from up north."

"Yukes?" the man inquired.

Alvah nodded, hoping for the

best, and pointed at the plants they were passing. "What these?"

"Hinge blanks. Let them to forage last month. Won't have another crop here till August, and a poor one then. I tell Angus—he's the Pit boss—I tell him this soil's wore out, but he a pincher—squeeze the last ton out and then go after the pounds and ounces. You should seen what come off the ringbushes in the east hundred this April. Pitiful. Had to sell them for eyelets."

A cold feeling was running up Alvah's spine. He cleared his throat. "Got any knife blades?" he inquired with careful casualness.

"Mean bowies? Well, sure—right over yonder."

**A**LVAH followed him to the end of the field and down three steps into the next. The plants here were much taller and darker, with stems thick and gnarled out of all proportion to their height. Here and there among the glossy leaves were incongruous glints of silvery steel.

Alvah stooped and peered into the foliage.

The silvery glints were perfectly formed six-inch chrome-steel knife blades. Each was attached to—growing from—the plant by way of a hard brown stem, exactly the right size and shape to serve as a handle.

He straightened carefully. "We do things a little different up north. You mind explaining briefly how the Pits works?"

Jerry looked surprised, but began readily enough. "These like any other ferropositors. They extract the metal from the ores and deposit it in the bowie shape, or whatever it might be. Work from the outside in, of course, so you don't have no wood core to weaken it. We get a year's crops, average, before the ore used up. Then we bring the Earth-movers in, deepen the Pit a few feet, reseed and start over. Ain't much more to it."

Alvah stared at the fantastic growths. Well, why not? Plants that grew into knives or door-knobs or . . .

"What about alloys?" he asked.

"We got iron, lead and zinc. Carbon from the air. Other metals we got to import in granules. Like we get chrome from the Northwest Federation, mostly. They getting too big for their britches, though. Greedy. I think we going to switch over to you Yukes before long. Not that you fellows is any better, if you ask me, but at least—"

"Rhodium," said Alvah. "Palladium. What about them?"

"How that?"

"Platinum group."

"Oh, sure, I know what you mean. We never use them. No call

to. We could get you some, I guess—I think the Northwests got them. Take a few months, though."

"Suppose you wanted to make something out of a rhodopalladium alloy. How long would it take after you got the metals?"

"Well, you have to make a bush that would take and put them together, right proportions, right size, right shape. Depends. I guess if you was in a hurry—"

"Never mind," said Alvah wearily. "Thanks for the information." He turned and started back toward the gate.

When he was halfway there, he heard a hullabaloo break out somewhere behind him.

"Waw!" the voices seemed to be shouting. "Waw! Waw!"

**H**E turned. A dozen paces behind him, Jerry and the bird on his shoulder were in identical neck-straining attitudes. Beyond them, on the near side of a group of low buildings three hundred yards away, three men were waving their arms madly and shouting, "Waw! Waw!"

"Wawnt to know what it is," the bird squawked. "I wawnt be a Mahn. Violet: you come along with me, to your own—"

"Shut up," said Jerry, then cupped his hands and yelled, "Angus, what is it?"

"Chicago," the answer drifted

back. "Just got word! They dusting Red Pits! Come on!"

Jerry darted a glance over his shoulder. "Come on!" he repeated and broke into a loping run toward the buildings.

Alvah hesitated an instant, then followed. With strenuous effort, he managed to catch up to the other man. "Where are we running to?" he panted. "Red Pits?"

"Don't talk foolish," Jerry gasped. "We running to shelter." He glanced back the way they had come. "Red Pits over that way."

Alvah risked a look and then another. The first time, he wasn't sure. The second time, the dusting of tiny particles over the horizon had grown to a cluster of visibly swelling black dots.

Other running figures were converging on the buildings as Angus and Jerry approached. The dots were capsule shapes, perceptibly elongated, the size of a fingernail, a thumbnail, a thumb . . .

And under them on the land was a hurtling streak of golden-dun haze, like dust stirred by a huge invisible finger.

Rounding the corner of the nearest building, Jerry popped through an open doorway. Alvah followed—

And was promptly seized from either side, long enough for something heavy and hard to hit him savagely on the nape of the neck.

**B**ITHER was intent over a shallow vessel half full of a viscous clear liquid, with a great rounded veined - and - patterned glistening lump immersed in it, transparent in the phosphor-light that glowed from the sides of the



container—a single living cell in mitosis, so grossly enlarged that every gene of every paired chromosome was visible. B. J. watched from the other side of the table, silent, breathing carefully, as the man's thick fingers dipped a hair-thin probe with minuscule precision, again and again, into the yeasty mass, exercising a particle, splitting another, delicately shaving a third.

From time to time, she glanced at a sheet of horn intricately inscribed with numbers and genetic symbols. The chart was there for her benefit, not for Bither's—he never paused or faltered.

Finally, he sat back and covered the pan. "Turn on the lights and put that in the reduction fluid, will you, Beej? I bushed."

She whistled a clear note, and the dark globes fixed to the ceiling glowed to blue-white life. "You going to grow it right away?" \*

"Have to, I guess. Dammit, Beej, I hate making weapons."

"Not our choice. When you think it be?"

He shrugged. "War meeting this afternoon over at Council Flats. They let us know when it be."

She was silent until she had transferred the living lump from one container to another and put it away. Then, "Hear anything more?"

"They dusting every ore-bed from here to the Illinois, look like. Crystal, Butler's—"

"Butler's! That worked out."

"I know it. We let them land there. They find out." After another pause, Bither said, "No word about Alvah, Beej. I sorry."

She nodded. "Wouldn't be, this early."

He looked at her curiously. "You still think he be back?"

"If the dust ain't got him. Lay you odds."

"Well," said Bither, lifting the cover of another pan to peer into it, "I hope you—"

"Ozark Lake nine-one-two-

five," said a reedy voice from the corner. "Ozark Lake nine—"

"Get that, will you, Beej?"

B. J. picked up the ocher spheroid from its shelf and said into its tympanum, "Bither Laboratories."

"This Angus Littleton at Iron Pits," the thing said. "Let me talk to Bither."

She passed it over, holding a loop of its rubbery cord—the beginning of a miles-long sheathed bundle of cultivated neurons that linked it, via a "switchboard" organism, with thousands like it in this area alone, and with millions more across the continent.

"This Doc Bither. What is it, Angus?"

"Something funny for you, Doc. We got a couple prisoners here, one a floater pilot, other a Chicago spy."

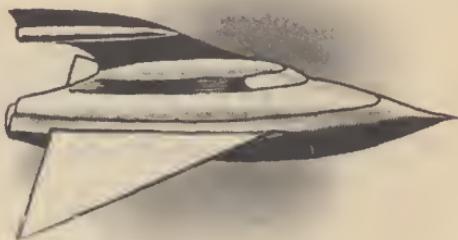
"Well, what you want me to—"

"Wait, can't you? This spy claim he know you, Doc. Say his name Custard. Alvah Custard."

**A**LVAH stared out through the window, puzzled and angry. He had been in the room for about half an hour, while things were going on outside. He had tried to break the window. The pane had bent slightly. It was neither glass nor plastic, and it wasn't breakable.

Outside, the last of the invading floaters was dipping down to-

ward the horizon, pursued by a small darting black shape. Golden-dun haze obscured all the foreground except the first few rows of plants, which were drooping on their stems. The squadron had made one grand circle of the mine area, dusting as they went, before the Muckfeet on their



incredibly swift flyers—birds or reptiles, Alvah couldn't tell which—had risen to engage them. Since then, a light breeze from the north had carried the stuff dropped over the Pits: radioactive dust with a gravitostatic charge to make it rebound and spread—and then, with its polarity reversed, cling like grim death where it fell.

He turned and looked at the other man, sitting blank-faced and inattentive, wearing rumpled sky-blue uniform, on the bench against the inner wall. Most of the squadron had flown off to the west after that first pass, and had

either escaped or been forced down somewhere beyond the Pits. This fellow had crash-landed in the fields not five hundred yards from Alvah's window. Alvah had seen the Muckfeet walking out to the wreck—strolling fantastically through the deadly haze—and turkey-trotting their prisoner back again. A little later, someone had opened the door and shoved the man in, and there he had sat ever since.

His skin-color was all right. He was breathing evenly and seemed in no discomfort. As far as Alvah could see, there was not a speck of the death-dust anywhere on his skin, hair or clothing. But mad as it was, this was not the most incongruous thing about him.

His uniform was of a cut and pattern that Alvah had seen only in pictures. There was a C on each gleaming button and, on the bar of the epaulette, CHICAGOLAND. In short, he was evidently a Floater Force officer from Chicago. The only trouble was that Alvah recognized him. He was a grips by day at the Seven Boroughs studios, famous for his dirty jokes, which he acquired at his night job in the Under Queens Power Station. He was a lieutenant j.g. in the N. Y. F. F. Reserve, and his name was Joe "Dimples" Mundry.

Alvah went over and sat down

beside him again. Mundry's normally jovial face was set in wooden lines. His eyes focused on Alvah, but without recognition.

"Joe—"

"My name," said Mundry obstinately, "is Bertram Palmer, Float Lieutenant, Windy City Regulars. My serial number is 79016935."

THAT was the only tune he knew. Alvah hadn't been able to get another word out of him. Name, rank and serial number—that was normal. Members of the armed services were naturally conditioned to say nothing else if captured. But why throw in the name of his outfit?

One, that was the way they did things in Chicago, and there just happened to be a Chicago soldier who looked and talked exactly like Joe Mundry, who had the same scars on his knuckles from brawls with the generator monkeys. Two, Alvah's mind had snapped. Three, this was a ringer foisted on Alvah for some incomprehensible purpose by the Muckfeet. And four—a wild and terrible suspicion . . .

Alvah tried again. "Listen, Joe, I'm your friend. We're on the same side. I'm not a Muckfoot."

"My name is Bertram Palmer, Float Lieutenant—"

"Joe, I'm leveling with you. Listen—remember the Music

Hall story, the one about the man who could . . ." Alvah explained in detail what the man could do. It was obscenely improbable and very funny, if you liked that sort of thing, and it was a story Joe had told him two days before he left New York.

A gleam of intelligence came into Joe's eyes. "What's the punchline?" he demanded.

"What the hell did you want to change the key on me for?" Alvah replied promptly.

Joe looked at him speculatively. "That might be a old joke. Maybe they even know it in the Sticks. And my name isn't Joe."

He really believed he was Bert-ram Palmer of the Windy City Regulars, that much seemed clear. Also, if it was possible that the Muckfeet knew that story, it was likelier still that the Chigagolanders knew it.

"All right," said Alvah, "ask me a question — something I couldn't know if I were a Muck-foot. Go ahead, anything. A place, or something that happened recently, or whatever you want."

A visible struggle was going on behind Joe's face. "Can't think of anything," he said at last. "Funny."

Alvah had been watching him closely. "Let's try this. Did you see *Manhattan Morons*?"

Joe looked blank. "What?"

"The realie. You mean you

missed it? *Manhattan Morons*? Till I saw that, I never really knew what a comical bunch of weak-minded, slobber-mouthed, monkey-faced drooling idiots those New Yorkers—"

Joe's expression had not changed, but a dull red flush had crept up over his collar. He made an inarticulate sound and lunged for Alvah's throat.

When Angus Littleton opened the door, with Jerry and B. J. behind him, the two men were rolling on the floor.

"**W**HAT made you think he was a spy?" B. J. demanded. They were a tight self-conscious group in the corridor. Alvah was nursing a split lip.

"Said he a Yuke," Jerry offered, "but didn't seem too sure, so I said the Yukes greedy. He never turn a hair. And he act like he never see a mine before. Things like that."

B. J. nodded. "It was a natural mistake, I guess. Well, thanks for calling us, Angus."

"Easy," said Angus, looking glum. "We ain't out of the rough yet, Beej."

"What do you mean? He didn't have anything to do with this attack—he's from New York."

"He say he is, but how you know? What make you think he ain't from Chicago?"

Alvah said, "While you're ask-

ing that, you might ask another question about him." He jerked a thumb toward the closed door. "What makes you think he is?"

The other three stared at him thoughtfully. "Alvah," Beej began, "what are you aiming at? Do you think—"

"I'm not sure," Alvah interrupted. "I mean I'm sure, but I'm not sure I want to tell you. Look," he said, turning to Angus, "let me talk to her alone for a few minutes, will you?"

Angus hesitated, then walked away down the hall, followed by Jerry.

"You've got to explain some things to me about this raid," said Alvah when they were out of hearing. "I saw those floaters dusting and it was the real thing. I can tell by the way the plants withered. But your people were walking around out there. Him, too—the prisoner. How come?"

"Antirads," said the girl. "Little para-insects, like the met-allophage—the metallophage was developed from them. When you've been exposed, the antirads pick the dust particles off you and deposit them in radproof pots. They die in the pots, too, and we bury the whole—"

"All right," Alvah said. "How long have you had those things? Is there any chance the Cities knew about it?"

"The antirads were developed

toward the end of the last City war. That was what ended it. At first we stopped the bombing, and then when they used dust— You never heard of any of this?"

"No," Alvah told her. "Third question, what are you going to do about Chicago now, on account of this raid?"

**P**ULL it down around their ears," B. J. said gravely. "We never did before partly because it wasn't necessary. We knew for the last thirty years that the Cities could never be more than a nuisance to us again. But this isn't just a raid. They've attacked us all over this district—ruined the crops in every mine. We must put an end to it now—not that it makes much difference, this year or ten years from now. And it isn't as if we couldn't save the people . . ."

"Never mind that," said Alvah abstractedly. Then her last words penetrated. "No, go ahead—what?"

"I started to say, we think we'll be able to save the people, or most of them—partly thanks to what we learned from you. It's just Chicago we're going to destroy, not the—"

"Learned from me?" Alvah repeated. "What do you mean?"

"We learned that, when it's a question of survival, a City man can overcome his conditioning.

You proved that. Did you eat the radnip?"

"Yes."

"There, you see? And you'll eat another and, sooner or later, you'll realize they taste good. A human being can learn to like anything that's needful to him. We're adaptable—you can't condition that out of us without breaking us."

Alvah stared at her. "But you spent over two weeks on me. How are you going to do that with fifteen or twenty million people all at once?"

"We can do it. You were the pilot model—two weeks for you. But now that we know how, we're pretty sure we can do it in three days—the important part, getting them to eat the food. And it's a good thing the storehouses are full, all over this continent."

They looked at each other silently for a moment. "But the Cities have to go," B. J. said.

"Fourth and last question," he said. "If a City knew about your radiation defenses all along, what would be their reason for attacking you this way?"

"Our first idea was that it was just plain desperation—they had to do something and there wasn't anything they could do that would work, so they just did something that wouldn't. Or maybe they hoped they'd be able to hold the mines long enough to

get some metal out, even though they knew it was foolish to hope."

"That was your first idea. What was your second?"

She hesitated. "You remember what I told you, that the Cities cannibalized each other for a while, the big ones draining population away from the little ones and reclaiming their metals—and you remember I said that had gone as far as it could?"

"Yes."

"Well, when the big fish have eaten up all the little fish, they can eat each other till there's just one big fish left."

"And?" asked Alvah tensely.

"And maybe one City might think that, if they got us to make war on another, they could step in when the fighting was over and get all the metals they'd need to keep them going for years. So they might send raiding parties out in the other City's uniforms, and condition them to think they really were from that City. Was that what happened, Alvah?"

**A LVAH** nodded reluctantly. "I don't understand it. They must have started planning this as soon as I stopped communicating. It doesn't make sense. They couldn't be that desperate—or maybe they could. Anyway, it's a dirty stunt. It isn't like New York."

She said nothing—too polite

to contradict him, Alvah supposed.

Down at the end of the hall, Angus was beginning to look impatient. Alvah said, "So now you'll pull New York down?"

"Alvah, it may sound funny, but I think you know this, really —you're doing your people a favor."

"If that's so," he said wryly, "then New York was 'really' trying to do one for Chicago."

"I was hoping you'd see that it doesn't matter. It might have been Chicago that went first, or Denver, or any of the others, but that isn't important—they all have to go. What's important is the people. This may be another thing that's hard for you to accept, but they're going to be happier, most of them."

And maybe she was right, Alvah thought, if you counted in everybody, labor pool, porters and all. Why shouldn't you count them, he asked himself defiantly —they were people, weren't they? Maybe the index of civilization was not only how much you had, but how hard you had to work for it—incessantly, like the New Yorkers, holding down two or three jobs at once, because the City's demands were endless—or, like the Muckfeet, judiciously and with honest pleasure.

"Alvah?" said the girl. She put her question no more explicitly

than that, but he knew what she meant.

"Yes, Beej," replied Alvah Gustad, Muckfoot.

## VIII

**O**N the Jersey flats, hidden by a forest of traveler trees, a sprawling settlement took form —mile after mile of forced-growth dwellings, stables, administration buildings, instruction centers. It was one of five. There was another farther north in Jersey, two in the Poconos and one in the vestigial state of Connecticut.

They lay empty, waiting, their roofs sprouting foliage that perfectly counterfeited the surrounding forests. Roads had been cleared, converging toward the City, ending just short of the half-mile strip of wasteland that girdled New York, and it was there that Alvah stood.

He found it strange to feel himself ready to walk unprotected across that stretch of country, knowing it to be acrawl with tiny organisms that had been developed not to tolerate Man's artificial buildings, whether of stone, metal, cement or plastics, but crumbled them all to the ground. Stranger still to be able to visualize the crawling organisms without horror or disgust.

But the strangest of all was

to be looking at the City from this viewpoint. The towers stared back at him across the surrounding wall, tall and shining and proud, the proudest human creation—a century ago. Pitifully outdated today, the gleaming Cities fought back, unaware that they had lost long ago, that their bright spires and elaborate gadgets were as antiquated as polished armor would have been against a dun-painted motorized army.

"I wish I could go with you," said Beej from the breathing forest at his back.

"You can't," Alvah said without turning. "They wouldn't let you through the gate alive. They know me, but even so, I'm not sure they'll let me in after all this time. Have to wait and see."

"You know you don't have to go. I mean—"

"I know what you mean," said Alvah unhappily, "and you're right. But all the same, I do have to go. Look, Beej, you've got that map I drew. It's a ten-to-one chance that, if I don't make the grade, they'll put me in the quarantine cells right inside the wall. So you're not to worry. Okay?"

"Okay," she promised, worried.

He kissed her and watched her fade back into the forest where the others were—Bither and Artie Brumbacher and a few others from home, the rest Jerseys and other clansmen from the Sea-

board Federation—cheerful, matter-of-fact people who were going to bear most of the burdens of what was coming, and never tired of reminding the inlanders of the fact.

He turned and walked out across the wasteland, crunching the dry weeds under his feet.

**T**HERE was a flaming moat around the City and, beyond the moat, high in the wall, a closed gateway—corroded tight, probably; it was a very long time since the City had had any traffic except by air. But there was a spy tower above the gate. Alvah walked up directly opposite its bulbous idiot eyes, waved, and then waited.

After a long time, an inconspicuous port in the tower squealed open and a fist-sized dark ovoid darted out across the flames. It came to rest in midair, two yards from Alvah, clicked and said crisply, "State your name and business."

"Alvah Gustad. I just got back from a confidential mission for the City Manager. Floater broke down, communicator, everything. I had to walk back. Tell him I'm here."

The ovoid hovered exactly where it was, as if pinned against the air. Alvah waited. When he got tired of standing, he dropped his improvised knapsack on the

ground and sat on it. Finally the ovoid said harshly, in another voice, "Who are you and what do you want?"

Alvah patiently gave the same answer.

"What do you mean, broke down?"

"Broke down," said Alvah. "Wouldn't run any more."

Silence. He settled himself for another long wait, but it was only five minutes or thereabouts before the ovoid said, "Strip."

When he had done so, the gate opposite broke open with a scream of tortured metal and ground itself back into a recess in the wall. The drawbridge, a long rust-pitted tongue of metal, thrust out and down to span the moat, a wall of flame on either side of it.

Alvah walked across nimbly, the metal already hot against his naked soles, and the drawbridge whipped back into its socket. The gate screamed shut.

THE room was the same, the anthems were the same. Alvah, disinfected, shaved all over and clad in an airtight glassine overall with its own air supply, stopped short two paces inside the door. The man behind the Manager's desk was not Wytak. It was jowly, red-faced Ellery McArdle, Commissioner of the Department of War.

One of the guards prodded Alvah and he kept going up to the desk. "Now I think I get it," he said, staring at McArdle. "When—"

McArdle's cold gaze flickered. Then his heavy head dropped forward a trifle, and he said, "Finish what you were saying, Gustad."

"I was about to remark," Alvah said, "that when Wytak's pet project flopped, he lost enough support to let you impeach him. Is that right?"

McArdle nodded and seemed to lose interest. "Your feet are not swollen or blistered, Gustad. You didn't walk back from the Plains. How did you get here?"

Alvah took a deep breath. "We flew—on a passenger roc—as far as the Adirondacks. We didn't want to alarm you by too much air traffic so near the City, so we joined a freight caravan there."

McArdle's stony face did not alter, but all the meaning went suddenly out of it. It was as if the man himself had stepped back and shut a door. The porter behind his chair swayed and looked as if he were about to faint. Alvah heard one of the guards draw in his breath sharply.

"Fthuh!" said McArdle abruptly, his face contorting. "Let's get this over. What do you know

about the military plans of the Muckfeet? Answer me fully. If I'm not satisfied that you do, I'll have you worked over till I am satisfied."

Alvah, who had been feeling something like St. George and something like a plucked chicken, discovered that anger could be a very comforting thing. "That's what I came here to do," he said tightly. "The Muckfeet's military plans are about what you might have expected, after that lousy trick of yours. They know it wasn't Chicago that raided them."

McArdle started and made as if to rise. Then he sank back, staring fixedly at Alvah.

"They've had a gutful. They're going to finish New York."

"When?" said McArdle, biting the word off short.

"That depends on you. If you're willing to be reasonable, they'll wait long enough for you to dicker with them. Otherwise, if I'm not back in about an hour, the fun starts."

**M**CARDLE touched a stud, "Green alert" pressed the stud again and laced his fingers together on the desk. "Hurry it up," he said to Alvah. "Let's have the rest."

"I'm going to ask you to do something difficult," said Alvah. "It's this—think about what I'm

telling you. You're not thinking now, you're just reacting—"

He heard a slight movement behind him, saw McArdle's eyes flicker and his hand make a *Not now* gesture.

"You're in the same room with a man who's turned Muckfoot and it disgusts you. You'll be cured of that eventually—you can be, I'm the proof—but all I want you to do now is put it aside and use your brains. Here are the facts. Your raiding parties got the shorts beat off them. I saw one of the fights—it lasted about twenty minutes. The Muckfeet could have polished off the Cities any time in the last thirty years. They haven't done it till now, because—"

McArdle was beating time with his fingertips on the polished ebonite. He wasn't really listening, Alvah saw, but there was nothing for it except to go ahead.

"—they had the problem of de-conditioning and re-educating more than twenty million innocent people, or else letting them starve to death. Now they have the knowledge they need. They can—"

"The terms," said McArdle.

"They're going to close down this—this reservation," Alvah said. "They'll satisfy you in any way you like that they can do it by force. If you help, it can be an orderly process in which no-

body gets hurt and everybody gets the best possible break. And they'll keep the City intact as a museum. I talked them into that. Or, if they have to, they'll take the place apart slab by slab."

McArdle's mouth was working violently. "Take him out and kill him, for City's sake! And, Morgan!" he called when Alvah and his guards were halfway to the door. .

"Yes, Mr. Manager."

"When you're through, dump him out the gate he came in."

IT was a pity about Wytak, Alvah's brain was telling him frozenly. Wytak was a scoundrel or he could never have got where he was—had been—but he wasn't afraid of a new idea. It might have been possible to deal with Wytak.

"Where we going to do it?" the younger one asked nervously. He had been pale and sweating in the floater all the way across Middle Jersey.

"In the disinfecting chamber," Morgan said, gesturing with his pistol. "Then we haul him straight out. In there, you."

"Well, let's get it over with," the younger one said. "I'm sick."

"You think I'm not sick?" said Morgan in a strained voice. He gave Alvah a final shove into the middle of the room and stood back, adjusting his gun.

Alvah found himself saying calmly, "Not that way. Morgan, unless you want to turn black and shrivel up a second after."

"What's he talking about?" the boy whispered shakily.

"Nothing," said Morgan. The hand with the gun moved indecisively.

"To puncture me," Alvah warned, "you've got to puncture the suit. And I've been eating Muckfeet food for the last month and a half. I'm full of micro-organisms—swarming with them. They'll bloop out of me straight at you, Morgan."

Both men jerked back, as if they had been stung. "I'm getting outa here!" said the boy, grabbing for the door stud.

Morgan blocked him. "Stay here!"

"What're you going to do?" the younger one asked.

He swore briefly. "We'll tell the O. D. Come on."

The door closed and locked solidly behind them. Alvah looked to see if there was a way to double-lock it from his side, but there wasn't. He tried the opposite door to make sure it was locked, which it was. Then he examined the disinfectant nozzles, wondering if they could be used to squirt corrosive in on him. He decided they probably couldn't and, anyhow, he had no way to spike the nozzles. Then

there was nothing to do but sit in the middle of the bare room and wait, which he did.

The next thing that happened was that he heard a faint far-off continuous noise through the almost soundproof door. He stood up and went over and put his ear against the door, and decided it was his imagination.

Then there was a noise, and he jumped back, his skin tingling all over, just before the door slid open. The sudden maniacal clangor of a bell swept Morgan into the room with it, wild-eyed, his cap missing, drooling from a corner of his mouth, his gun high in one white-knuckled fist.

"Glah!" said Morgan and pulled the trigger.

**A**LVAH'S heart went *bonk* hard against his ribs, and the room blurred. Then he realized that there hadn't been any hiss of an ejected pellet. And he was still on his feet. And Morgan, with his mouth stretched open all the way back to the uvula, was standing there a yard away, staring at him and pulling the trigger repeatedly.

Alvah stepped forward half a pace and put a straight left squarely on the point of Morgan's jaw. As the man fell, there were shrieks and running footsteps in the outer room. Somebody in Guard uniform plunged

past the doorway, shouting incoherently, caromed off a wall, dwindled down a corridor. Then the room was full of leaping men in motley.

The first of them was Artie Brumbacher, almost unrecognizable because he was grinning from ear to ear. He handed Alvah a four-foot knobkerrie and a bulging skin bag and said, "Le's go!"

The streets were full of grounded floaters and stalled surface cars. The bells had fallen silent, and so had the faint omnipresent vibration that was like silence itself until it was gone. Not a motor was turning in the Borough of Jersey. Occasional chittering sounds floated on the air, and muffled buzzings and other odd sounds, all against the background chorus of faraway shrieks that rose and fell.

At the corner of Middle Orange and Weehawken, opposite the Superior Court Building, they came upon a squad of Regulars who had thrown away their useless guns and picked up an odd lot of assorted bludgeons — lengths of pipe, tripods and the like.

"Now you'll see," said Artie.

The Regulars set up a ragged yell and came running forward. The two Muckfeet on either side of Alvah, Artie and the buck-toothed one called Lafe, dipped heaping dark-brown handfuls out

of the bags they carried slung from their shoulders. Alvah followed suit, and recognized the stuff at last—bran meal, soaked in some fragrant syrup until it was mucilaginous and heavy.

Artie swung first, then Lafe, and Alvah last—and the soggy lumps smacked the foremost faces. The squad broke, wiping frenziedly. But you couldn't wipe the stuff off. It clung coldly and grainily to the hair on the backs of your hands and your eyelashes and the nap of your clothing. All you could do was move it around.

One berserker with a smeared face didn't stop, and Lafe dropped him with a knobkerrie between the eyes. One more, a white-faced youth, stood miraculously untouched, still hefting his club. He took a stride forward menacingly.

Grinning, Artie raised another glob of the mash and ate it, smacking his lips. The youth spun around, walked drunkenly to the nearest wall and was racked sick.

**A**N hour later, Knickerbocker Circle in Over Manhattan was littered with ameba-shaped puddles of clear plastic. Overhead, the stuff was hanging in festoons from the reticulated framework of the Roof and, for the first time in a century, an unfiltered wind was blowing into

New York. Halfway up the sheer facade of the Old Movie House, the roc that had brought Alvah from Jersey was flapping along, a wingtip almost brushing the louvers, while its rider sprinkled pale dust from a sack. Farther down the street, a sickly green growth was already visible on cornices and window frames.

The antique neon sign of the Old Movie dipped suddenly, its supports softened visibly. It swung, nodded and crashed to the pavement.

Three hours later, a little group of whey-faced men in official dress was being loaded aboard a freight roc opposite the underpass to the Cauldwell Floatway in Over Bronnix. Alvah thought he saw McArdle among them, but he couldn't be sure.

Twilight—all the streets that radiated from the heart of the City were afloat with long, slowly surging tides of humanity, dim in the weak glow from the lumen globes plastered haphazardly to the flanks of the buildings. At the end of every street, the Wall was crumbled down and the moat filled, its fire long gone out. And down the new railed walkways from all three levels came the men, women and children, stumbling out into the alien lumen-lit night and the strange scents and the wide world.

Watching from the hilltop,

with his arm around his wife's waist, Alvah saw them being herded into groups and led away, unprotesting—saw them in the wains, rolling off toward the temporary shelters where, likely as not, they would sleep the night through, too numbed to be afraid of the morrow.

In the morning, their teaching would begin.

*Babylon, Alvah thought, Thebes, Angkor, Lagash, Agade, Tyre, Luxor, and now New York.*

A City grew out and then in—it was always the way, whether or not it had a Barrier around it.

Growing, it crippled itself and its people—and died. The weeds overgrew its felled stones.

"Like an egg," B. J. said, although he had not spoken. "Omne ex ovum—but the egg-shell has to break."

"I know," said Alvah, discovering that the empty ache in his belly was not sentiment but hunger. "Speaking of eggs—"

B. J. gave his arm a reassuring little pat. "Anything you want, dear. Radnip, orangoe, pearots, fleetmeat—you pick the menu."

Alvah's mouth began to water.

—DAMON KNIGHT

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## **Forecast**

Either of the two long novelets in next month's issue would make a fine lead story, but when didn't GALAXY shoot the works? To cover your 35c bet, here is what we're putting up:

**BEEP** by James Blish . . . one of the freshest, most ingenious time stories ever written. It's hard to tell you a little about it without telling you all. The idea, you see, is compressed right into the title itself!

**MEN LIKE MULES** by J. T. M'Inosh . . . the story of the hardest and most desperate advertising campaign in the history of humanity. With Earth rapidly dying, the job of the relief expedition is to remove the survivors. Very humanitarian indeed, but there's one huge problem . . . the survivors have to be sold on being saved!

At least one and possibly two more novelets.

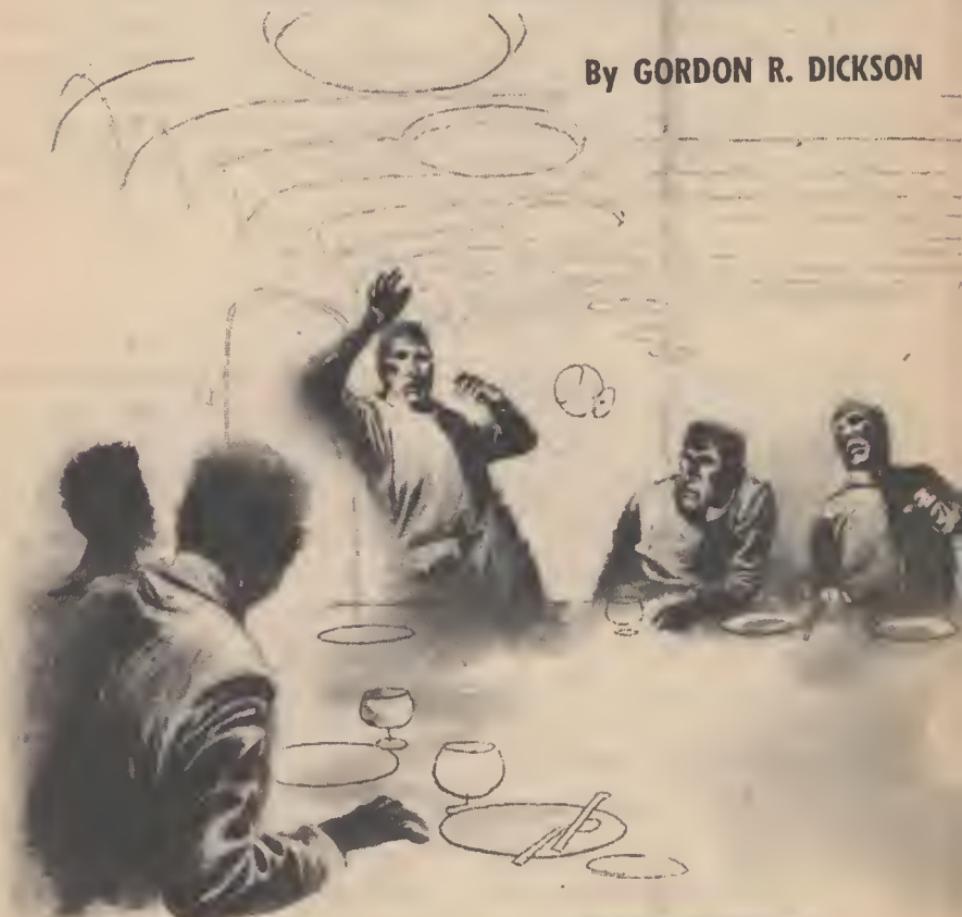
Short stories . . . as many as we can shoehorn into the issue.

Willy Ley's **FOR YOUR INFORMATION**, containing hints for future archeologists and answers to your science questions . . . and our regular features.

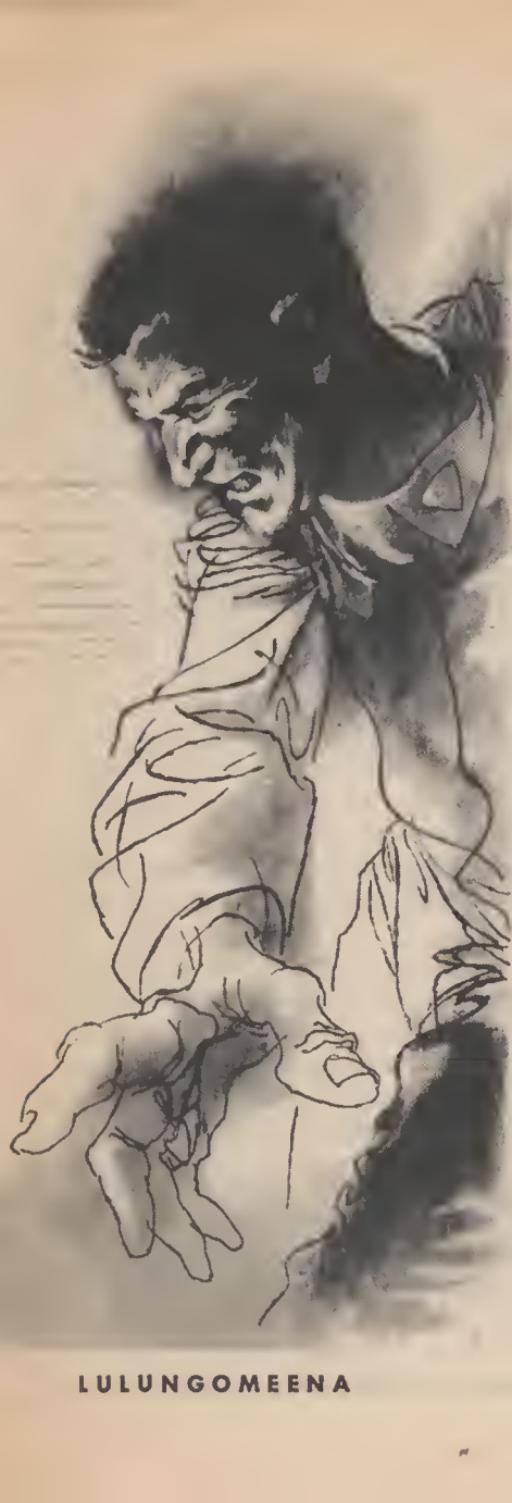
Be it ever so (A) impossibly squalid or (B)  
impossibly lovely, there was, respectively,  
no place in the Galaxy like Station 563 or:

# LULUNGOMEENA

By GORDON R. DICKSON



Illustrated by KOSSIN



**B**LAME Clay Harbank, if you will, for what happened at Station 563 of the Sirius Sector; or blame William Peterborough, whom we called the Kid. I blame no one. But I am a Dorsai man.

The trouble began the day the kid joined the station, with his quick hands and his gambler's mind, and found that Clay, alone of all the men there, would not gamble with him—for all that he claimed to having been a gambling man himself. And so it ran on for four years of service together.

But the beginning of the end was the day they came off shift together.

They had been out on a duty circuit of the frontier station that housed the twenty of us—searching the outer bubble for signs of blows or leaks. It's a slow two hour tramp, that duty, even outside the station on the surface of the asteroid where there's no gravity to speak of. We, in the recreation room, off duty, could tell by the sound of their voices as the inner port sucked open and the clanging clash of them removing their spacesuits came echoing to us along the metal corridor, that the Kid had been needling Clay through the whole tour.

"Another day," came the Kid's voice, "another fifty credits. And

how's the piggy bank coming along, Clay?"

**T**HREE was a slight pause, and I could see Clay carefully controlling his features and his voice. Then his pleasant baritone, softened by the burr of his Tarsusian accent, came smoothly to us.

"Like a gentleman, Kid," he answered. "He never overeats and so he runs no danger of indigestion."

It was a neat answer, based on the fact that the Kid's own service account was swollen with his winnings from the rest of the crew. But the Kid was too thick-skinned for rapier thrusts. He laughed; and they finished removing their equipment and came on into the recreation room.

They made a striking picture as they entered, for they were enough alike to be brothers—although father and son would have been a more likely relationship, considering the difference in their ages. Both were tall, dark, wide-shouldered men with lean faces, but experience had weathered the softer lines from Clay's face and drawn thin parentheses about the corners of his mouth. There were other differences, too; but you could see in the Kid the youth that Clay had been, and in Clay the man that the Kid would some day be.

"Hi, Clay," I said.

"Hello, Mort," he said, sitting down beside me.

"Hi, Mort," said the Kid.

I ignored him; and for a moment he tensed. I could see the anger flame up in the ebony depths of his black pupils under the heavy eyebrows. He was a big man; but I come from the Dorsai Planets and a Dorsai man fights to the death, if he fights at all. And, in consequence, among ourselves, we of Dorsai are a polite people.

But politeness was wasted on the Kid—as was Clay's delicate irony. With men like the Kid, you have to use a club.

We were in bad shape. The twenty of us at Frontier Station 563, on the periphery of the human area just beyond Sirius, had gone sour, and half the men had applications in for transfer. The trouble between Clay and the Kid was splitting the station wide open.

We were all in the Frontier Service for money; that was the root of the trouble. Fifty credits a day is good pay—but you have to sign up for a ten year hitch. You can buy yourself out—but that costs a hundred thousand. Figure it out for yourself. Nearly six years if you saved every penny you got. So most go in with the idea of staying the full decade.

That was Clay's idea. He had

gambled most of his life away. He had won and lost several fortunes. Now he was getting old and tired and he wanted to go back—to Lulungomeena, on the little planet of Tarsus, which was the place he had come from as a young man.

But he was through with gambling. He said money made that way never stuck, but ran away again like quicksilver. So he drew his pay and banked it.

But the Kid was out for a killing. Four years of play with the rest of the crew had given him more than enough to buy his way out and leave him a nice stake. And perhaps he would have done just that, if it hadn't been that the Service account of Clay's drew him like an El Dorado. He could not go off and leave it. So he stayed with the outfit, riding the older man unmercifully.

HE harped continually on two themes. He pretended to disbelieve that Clay had ever been a gambler; and he derided Lulungomeena, Clay's birthplace: the older man's goal and dream, and the one thing he could be drawn into talk about. For, to Clay, Lulungomeena was beautiful, the most wonderful spot in the Universe; and with an old man's sick longing for home, he could not help saying so.

"Mort," said the Kid, ignoring

the rebuff and sitting down beside us, "what's a Hixabrod like?"

My club had not worked so well, after all. Perhaps, I, too, was slipping. Next to Clay, I was the oldest man on the crew, which was why we were close friends. I scowled at the Kid.

"Why?" I asked.

"We're having one for a visitor," he said.

Immediately, all talk around the recreation room ceased and all attention was focused on the Kid. All aliens had to clear through a station like ours when they crossed the frontier from one of the other great galactic power groups into human territory. But isolated as Station 563 was, it was seldom an alien came our way, and when one did, it was an occasion.

Even Clay succumbed to the general interest. "I didn't know that," he said. "How'd you find out?"

"The notice came in over the receiver when you were down checking the atmosphere plant," answered the Kid with a careless wave of his hand. "I'd already filed it when you came up. What'll he be like, Mort?"

I had knocked around more than any of them—even Clay. This was my second stretch in the Service. I remembered back about twenty years, to the Denebian Trouble.

"Stiff as a poker," I said. "Proud as Lucifer, honest as sunlight and tight as a camel on his way through the eye of a needle. Sort of a humanoid, but with a face like a collie dog. You know the Hixabrodian reputation, don't you?"

Somebody at the back of the crowd said no, although they may have been doing it just to humor me. Like Clay with his Lulungomeena, old age was making me garrulous.

"They're the first and only mercenary ambassadors in the known Universe," I said. "A Hixabrod can be hired, but he can't be influenced, bribed or forced to come up with anything but the cold truth—and, brother, it's cold the way a Hixabrod serves it up to you. That's why they're so much in demand. If any kind of political dispute comes up, from planetary to inter-alien power group levels, both sides have to hire a Hixabrod to represent them in the discussions. That way they know the other side is being honest with them. The opposing Hixabrod is a living guarantee of that."

"He sounds good," said the Kid. "What say we get together and throw him a good dinner during his twenty-four hour stop-over?"

"You won't get much in the way of thanks from him," I

grunted. "They aren't built that way."

"Let's do it anyway," said the Kid. "Be a little excitement for a change."

**A** MURMUR of approval ran through the room. I was out-voted. Even Clay liked the idea.

"Hixabrods eat what we eat, don't they?" asked the Kid, making plans. "Okay, then, soups, salad, meats, champagne and brandy—" he ran on, ticking the items off on his fingers. For a moment, his enthusiasm had us all with him. But then, just at the end, he couldn't resist getting in one more dig at Clay.

"Oh, yes," he finished, "and for entertainment, you can tell him about Lulungomeena, Clay."

Clay winced—not obviously, but we all saw a shadow cross his face. Lulungomeena on Tarsus, his birthplace, held the same sort of obsession for him that his Service account held for the Kid; but he could not help being aware that he was prone to let his tongue run away on the subject of its beauty. For it was where he belonged, in the stomach-twisting, throat-aching way that sometimes only talk can relieve.

I was a Dorsai man and older than the rest. I understood. No one should make fun of the bond tying a man to his home world. It is as real as it is intangible.

And to joke about it is cruel. . .

But the Kid was too young to know that yet. He was fresh from Earth—Earth, where none of the rest of us had been, yet which, hundreds of years before, had been the origin of us all. He was eager and strong and contemptuous of emotion. He saw, as the rest of us recognized also, that Clay's tendency to let his talk wander ever to the wonder of Lulungomeena was the first slight crack in what had once been a man of unflawed steel. It was the first creeping decay of age.

But, unlike the rest of us, who hid our boredom out of sympathy, the Kid saw here a chance to break Clay and his resolution to do no more gambling. So he struck out constantly at this one spot so deeply vital that Clay's self-possession was no defense.

Now, at this last blow, the little fires of anger gathered in the older man's eyes.

"That's enough," he said harshly. "Leave Lulungomeena out of the discussion."

"I'm willing to," said the Kid. "But somehow you keep reminding me of it. That and the story that you once were a gambler. If you won't prove the last one, how can you expect me to believe all you say about the first?"

The veins stood out on Clay's forehead; but he controlled himself.

"I've told you a thousand times," he said between his teeth. "Money made by gambling doesn't stick. You'll find that out for yourself one of these days."

"Words," said the Kid airily. "Only words."

For a second, Clay stood staring whitely at him, not even breathing. I don't know if the Kid realized his danger or cared, but I didn't breathe, either, until Clay's chest expanded and he turned abruptly and walked out of the recreation room. We heard his bootsteps die away down the corridor toward his room in the dormitory section.

LATER, I braced the Kid about it. It was his second shift time, when most of the men in the recreation room had to go on duty. I ran the Kid to the ground in the galley where he was fixing himself a sandwich. He looked up, a little startled, more than a little on the defensive, as I came in.

"Oh, hi, Mort," he said, with a pretty good imitation of casualness. "What's up?"

"You," I told him. "Are you looking for a fight with Clay?"

"No," he drawled with his mouth full. "I wouldn't exactly say that."

"Well, that's what you're liable to get."

"Look, Mort," he said, and

then paused until he had swallowed. "Don't you think Clay's old enough to look after himself?"

I felt a slight and not unpleasant shiver run down between my shoulder-blades and my eyes began to grow hot. It was my Dorsai blood again. It must have showed on my face, for the Kid, who had been sitting negligently on one edge of the galley table, got up in a hurry.

"Hold on, Mort," he said. "Nothing personal."

I fought the old feeling down and said as calmly as I could, "I just dropped by to tell you something. Clay has been around a lot longer than you have. I'd advise you to lay off him."

"Afraid he'll get hurt?"

"No," I answered. "I'm afraid you will."

The Kid snorted with sudden laughter, half choking on his sandwich. "Now I get it. You think I'm too young to take care of myself."

"Something like that, but not the way you think. I want to tell you something about yourself and you don't have to say whether I'm right or wrong—you'll let me know without words."

"Hold it," he said, turning red. "I didn't come out here to get psyched."

"You'll get it just the same. And it's not for you only—it's for

all of us, because men thrown together as closely as we are choose up sides whenever there's conflict, and that's as dangerous for the rest of us as it is for you."

"Then the rest of you can stay out of it."

"We can't," I said. "What affects one of us affects us all. Now I'll tell you what you're doing. You came out here expecting to find glamor and excitement. You found monotony and boredom instead, not realizing that that's what space is like almost all the time."

HE picked up his coffee container. "And now you'll say I'm trying to create my own excitement at Clay's expense. Isn't that the standard line?"

"I wouldn't know; I'm not going to use it, because that's not how I see what you're doing. Clay is adult enough to stand the monotony and boredom if they'll get him what he wants. He's also learned how to live with others and with himself. He doesn't have to prove himself by beating down somebody either half or twice his age."

He took a drink and set the container down on the table. "And I do?"

"All youngsters do. It's their way of experimenting with their potentialities and relationships with other people. When they find

that out, they can give it up—they're mature then—although some never do. I think you will, eventually. The sooner you stop doing it here, though, the better it'll be for you and us."

"And if I don't?" he challenged.

"This isn't college back on Earth or some other nice, safe home planet, where hazing can be a nuisance, but where it's possible to escape it by going somewhere else. There isn't any 'somewhere else' here. Unless the one doing the hazing sees how reckless and dangerous it is, the one getting hazed takes it as long as he can—and then something happens."

"So it's Clay you're really worried about, after all."

"Look, get it through your skull. Clay's a man and he's been through worse than this before. You haven't. If anybody's going to get hurt, it'll be you."

He laughed and headed for the corridor door. He was still laughing as it slammed behind him. I let him go. There's no use pushing a bluff after it's failed to work.

THE next day, the Hixabrod came. His name was Dor Lassos. He was typical of his race, taller than the tallest of us by half a head, with a light green skin and that impassive Hixa-

brodian canine face.

I missed his actual arrival, being up in the observation tower checking meteor paths. The station itself was well protected, but some of the ships coming in from time to time could have gotten in trouble with a few of the larger ones that slipped by us at intervals in that particular sector. When I did get free, Dor Lassos had already been assigned to his quarters and the time of official welcoming was over.

I went down to see him anyhow on the off-chance that we had mutual acquaintances either among his race or mine. Both of our peoples are few enough in number, God knows, so the possibility wasn't too far-fetched. And, like Clay, I yearned for anything connected with my home.

"*Wer velt d'hatchen, Hixabrod*—" I began, walking into his apartment—and stopped short.

The Kid was there. He looked at me with an odd expression on his face.

"Do you speak Hixabrodian?" he asked incredulously.

I nodded. I had learned it on extended duty during the Denebian Trouble. Then I remembered my manners and turned back to the Hixabrod; but he was already started on his answer.

"*En gles Ter, I tu, Dorsaiven*," returned the collie face, expressionlessly. "*Da Tr'amgen lang*.

*Met zurrer nebent?"*

*“Em getluc. Me mi Dorsai fene. Nono ne—ves luc Les Las-sos?”*

He shook his head.

Well, it had been a shot in the dark anyway. There was only the faintest chance that he had known our old interpreter at the time of the Denebian Trouble. The Hixabrods have no family system of nomenclature. They take their names from the names of older Hixabrods they admire or like. I bowed politely to him and left.

It was not until later that it occurred to me to wonder what in the Universe the Kid could find to talk about with a Hixabrod.

I ACTUALLY was worried about Clay. Since my bluff with the Kid had failed, I thought I might perhaps try with Clay himself. At first I waited for an opportune moment to turn up; but following the last argument with the Kid, he'd been sticking to his quarters. I finally scrapped the casual approach and went to see him.

I found him in his quarters, reading. It was a little shocking to find that tall, still athletic figure in a dressing gown like an old man, eyes shaded by the lean fingers of one long hand, poring over the little glow of a scanner with the lines unreeling before his

eyes. But he looked up as I came in, and the smile on his face was the smile I had grown familiar with over four years of close living together.

“What's that?” I asked, nodding at the book scanner.

He set it down and the little light went out, the lines stopped unreeling.

“A bad novel,” he said, smiling, “by a poor author. But they're both Tarsusian.”

I took the chair he had indicated. “Mind if I speak straight out, Clay?”

“Go ahead,” he invited.

“The Kid,” I said bluntly. “And you. The two of you can't go on this way.”

“Well, old fire-eater,” answered Clay lightly, “what've you got to suggest?”

“Two things. And I want you to think both of them over carefully before answering. First, we see if we can't get up a nine-tenths majority here in the station and petition him out as incompatible.”

CLAY slowly shook his head.

“We can't do that, Mort.”

“I think I can get the signatures if I ask it,” I said. “Everybody's pretty tired of him . . . They'd come across.”

“It's not that and you know it,” said Clay. “Transfer by petition isn't supposed to be preju-

dicial, but you and I know it is. He'd be switched to some hard-case station, get in worse trouble there, and end up in a penal post generally shot to hell. He'd know who to blame for it, and he'd hate us for the rest of his life."

"What of it? Let him hate us."

"I'm a Tarsusian. It'd bother me and I couldn't do it."

"All right," I said. "Dropping that, then, you've got nearly seven years in, total, and half the funds you need to buy out. I've got nearly enough saved, in spite of myself, to make up the rest. In addition, for your retirement, I'll sign over to you my pay for the three years I've got left. Take that and get out of the Service. It isn't what you figured on having, but half a loaf . . ."

"And how about your home-going?" he asked.

"Look at me."

He looked; and I knew what he was seeing—the broken nose, the scars, the lined face—the Dorsai face.

"I'll never go home," I said.

He sat looking at me for a long moment more, and I fancied I saw a little light burn deep in back of his eyes. But then the light went out and I knew that I'd lost with him, too.

"Maybe not," he said quietly. "But I'm not going to be the one that keeps you from it."

I left him to his book.

SHIFTS are supposed to run continuously, with someone on duty all the time. However, for special occasions, like this dinner we had arranged for the Hixabrod, it was possible, by getting work done ahead of time and picking the one four hour stretch during the twenty-four when there were no messages or ships due in, to assemble everybody in the station on an off-duty basis.

So we were all there that evening, in the recreation room, which had been cleared and set up with a long table for the dinner. We finished our cocktails, sat down at the table and the meal began.

As it will, the talk during the various courses turned to things outside the narrow limits of our present lives. Remembrances of places visited, memories of an earlier life, and the comparison of experiences, some of them pretty weird, were the materials of which our table talk was built.

Unconsciously, all of us were trying to draw the Hixabrod out. But he sat in his place at the head of the table between Clay and myself, with the Kid a little farther down, preserving a frosty silence until the dessert had been disposed of and the subject of Media unexpectedly came up.

"—Media," said the Kid. "I've heard of Media. It's a little

planet, but it's supposed to have everything from soup to nuts on it in the way of life. There's one little life-form there that's claimed to contain something of value to every metabolism. It's called—let me see now—it's called—"

"It is called *nygti*," supplied Dor Lassos, suddenly, in a metallic voice. "A small quadruped with a highly complex nervous system and a good deal of fatty tissue. I visited the planet over eighty years ago, before it was actually opened up to general travel. The food stores spoiled and we had the opportunity of testing out the theory that it will provide sustenance for almost any kind of known intelligent being."

He stopped.

"WELL?" demanded the Kid.  
"Since you're here to tell the story, I assume the animal kept you alive."

"I and the humans aboard the ship found the *nygti* quite nourishing," said Dor Lassos. "Unfortunately, we had several Micrushni from Polaris also aboard."

"And those?" asked someone.

"A highly developed but inelastic life-form," said Dor Lassos, sipping from his brandy glass. "They went into convulsions and died."

I had had some experience

with Hixabrodian ways and I knew that it was not sadism, but a complete detachment that had prompted this little anecdote. But I could see a wave of distaste ripple down the room. No life-form is so universally well liked as the Micrushni, a delicate iridescent jellyfishlike race with a bent toward poetry and philosophy.

The men at the table drew away almost visibly from Dor Lassos. But that affected him no more than if they had applauded loudly. Only in very limited ways are the Hixabrod capable of empathy where other races are concerned.

"That's too bad," said Clay slowly. "I have always liked the Micrushni." He had been drinking somewhat heavily and the seemingly innocuous statement came out like a half-challenge.

Dor Lassos' cold brown eyes turned and rested on him. Whatever he saw, whatever conclusions he came to, however, were hidden behind his emotionless face.

"In general," he said flatly, "a truthful race."

That was the closest a Hixabrod could come to praise, and I expected the matter to drop there. But the Kid spoke up again.

"Not like us humans," he said.  
"Eh, Dor Lassos?"

I glared at him from behind

Dor Lassos' head. But he went recklessly on.

"I said, 'Not like us humans, eh?'" he repeated loudly. The Kid had also apparently been drinking freely, and his voice grated on the sudden silence of the room.

"The human race varies," stated the Hixabrod emotionlessly. "You have some individuals who approach truth. Otherwise, the human race is not notably truthful."

It was a typical, deadly accurate Hixabrodian response. Dor Lassos would have answered in the same words if his throat was to have been cut for them the minute they left his mouth. Again, it should have shut the Kid up, and again it apparently failed.

"Ah, yes," said the Kid. "Some approach truth, but in general we are untruthful. But you see, Dor Lassos, a certain amount of human humor is associated with lies. Some of us tell lies just for fun."

DOR Lassos drank from his brandy glass and said nothing.

"Of course," the Kid went on, "sometimes a human thinks he's being funny with his lies when he isn't. Some lies are just boring, particularly when you're forced to hear them over and over again.

But on the other hand, there are some champion liars who are so good that even you would find their untruths humorous."

Clay sat upright suddenly, and the sudden start of his movement sent the brandy slopping out over the rim of his glass and onto the white tablecloth. He stared at the Kid.

I looked at them all—at Clay, at the Kid and at Dor Lassos; and an ugly premonition began to form in my brain.

"I do not believe I should," said Dor Lassos.

"Ah, but you should listen to a real expert," said the Kid feverishly, "when he has a good subject to work on. Now, for example, take the matter of home worlds. What is your home world, Hixa, like?"

I had heard enough and more than enough to confirm the suspicion forming within me. Without drawing any undue attention to myself, I rose and left the room.

The alien made a dry sound in his throat and his voice followed me as I went swiftly down the empty corridor.

"It is very beautiful," he said in his adding machine tones. "Hixa has a diameter of thirty-eight thousand universal meters. It possesses twenty-three great mountain ranges and seventeen large bodies of salt water . . ."

The sound of his voice died away and I left it behind me.

I went directly through the empty corridors and up the ladder to the communications shack. I went in the door without pausing, without—in neglect of all duty rules—glancing at the automatic printer to see if any fresh message out of routine had arrived, without bothering to check the transmitter to see that it was keyed into the automatic location signal for approaching space-craft.

All this I ignored and went directly to the file where the incoming messages are kept.

I flicked the tab and went back to the file of two days previous, skimming through the thick sheaf of transcripts under that dateline. And there, beneath the heading "Notices of Arrivals," I found it, the message announcing the coming of Dor Lassos. I ran my finger down past the statistics on our guest to the line of type that told me where the Hixabrod's last stop had been.

*Tarsus.*

**C**LAY was my friend. And there is a limit to what a man can take without breaking. On a wall of the communications shack was a roster of the men at our station. I drew the Dorsai sign against the name of William Peterborough, and checked my

gun out of the arms locker.

I examined the magazine. It was loaded. I replaced the magazine, put the gun inside my jacket, and went back to the dinner.

Dor Lassos was still talking.

"... The flora and the fauna are maintained in such excellent natural balance that no local surplus has exceeded one per cent of the normal population for any species in the last sixty thousand years. Life on Hixa is regular and predictable. The weather is controlled within the greatest limits of feasibility."

As I took my seat, the machine voice of the Hixabrod hesitated for just a moment, then gathered itself, and went on: "One day I shall return there."

"A pretty picture," said the Kid. He was leaning forward over the table now, his eyes bright, his teeth bared in a smile. "A very attractive home world. But I regret to inform you, Dor Lassos, that I've been given to understand that it pales into insignificance when compared to one other spot in the Galaxy."

The Hixabrod are warriors, too. Dor Lassos' features remained expressionless, but his voice deepened and rang through the room.

"Your planet?"

"I wish it were," returned the Kid with the same wolfish smile. "I wish I could lay claim to it. But this place is so wonderful

that I doubt if I would be allowed there. In fact," the Kid went on, "I have never seen it. But I have been hearing about it for some years now. And either it is the most wonderful place in the Universe, or else the man who has been telling me about it—"

I pushed my chair back and started to rise, but Clay's hand clamped on my arm and held me down.

"You were saying—" he said to the Kid, who had been interrupted by my movement.

"—The man who has been telling me about it," said the Kid, deliberately, "is one of those champion liars I was telling Dor Lassos about."

Once more I tried to get to my feet, but Clay was there before me. Tall and stiff, he stood at the end of the table.

"My right—" he said out of the corner of his mouth to me.

Slowly and with meaning, he picked up his brandy glass and threw the glass straight into the Kid's face. It bounced on the table in front of him and sent brandy flying over the front of the Kid's immaculate dress uniform.

"Get your gun!" ordered Clay.

**N**OW the Kid was on his feet. In spite of the fact that I knew he had planned this, emotion had gotten the better of him

at the end. His face was white with rage. He leaned on the edge of the table and fought with himself to carry it through as he had originally intended.

"Why guns?" he said. His voice was thick with restraint, as he struggled to control himself.

"You called me a liar."

"Will guns tell me if you are?" The Kid straightened up, breathing more easily; and his laugh was harsh in the room. "Why use guns when it's possible to prove the thing one way or another with complete certainty?" His gaze swept the room and came back to Clay.

"For years now you've been telling me all sorts of things," he said. "But two things you've told me more than all the rest. One was that you used to be a gambler. The other was that Lulgomeena—your precious Lulgomeena on Tarsus—was the most wonderful place in the Universe. Is either one of those the truth?"

Clay's breath came thick and slow.

"They're both the truth," he said, fighting to keep his voice steady.

"Will you back that up?"

"With my life!"

"Ah," said the Kid mockingly, holding up his forefinger, "but I'm not asking you to back those statements up with your life—

but with that neat little hoard you've been accumulating these past years. You claimed you're a gambler. Will you bet that those statements are true?"

Now, for the first time, Clay seemed to see the trap.

"Bet with me," invited the Kid, almost lightly. "That will prove the first statement."

"And what about the second?" demanded Clay.

"Why—" the Kid gestured with his hand toward Dor Lassos—"what further judge do we need? We have here at our table a Hixabrod." Half-turning to the alien, the Kid made him a little bow. "Let him say whether your second statement is true or not."

Once more I tried to rise from my seat and again Clay's hand shoved me down. He turned to Dor Lassos.

"Do you think you could judge such a point, sir?" he asked.

The brown inhuman eyes met his and held for a long moment.

"I have just come from Tarsus," said the Hixabrod. "I was there as a member of the Galactic Survey Team, mapping the planet. It was my duty to certify to the truth of the map."

**T**HE choice was no choice. Clay stood staring at the Hixabrod as the room waited for his answer. Rage burning within me, I looked down the table for a

sign in the faces of the others that this thing might be stopped. But where I expected to see sympathy, there was nothing. Instead, there was blankness, or cynicism, or even the wet-lipped interest of men who like their excitement written in blood or tears.

And I realized with a sudden sinking of hopes that I stood alone, after all, as Clay's friend. In my own approaching age and garrulity I had not minded his talk of Lulungomeena, hour on repetitive hour. But these others had grown weary of it. Where I saw tragedy, they saw only retribution coming to a lying bore.

And what Clay saw was what I saw. His eyes went dark and cold.

"How much will you bet?" he asked.

"All I've got," responded the Kid, leaning forward eagerly. "Enough and more than enough to match that bank roll of yours. The equivalent of eight years' pay."

Stiffly, without a word, Clay produced his savings book and a voucher pad. He wrote out a voucher for the whole amount and laid book and voucher on the table before Dor Lassos. The Kid, who had obviously come prepared, did the same, adding a thick pile of cash from his gambling of recent weeks.

"That's all of it?" asked Clay.

"All of it," said the Kid. Clay nodded and stepped back. "Go ahead," he said. The Kid turned toward the alien.

"Dor Lassos," he said. "We appreciate your cooperation in this matter."

"I am glad to hear it," responded the Hixabrod, "since my co-operation will cost the winner of the bet a thousand credits."

The abrupt injection of this commercial note threw the Kid momentarily off stride. I, alone in the room, who knew the Hixabrod people, had expected it. But the rest had not, and it struck a sour note, which reflected back on the Kid. Up until now, the bet had seemed to most of the others like a cruel but at least honest game, concerning ourselves only. Suddenly it had become a little like hiring a paid bully to beat up a stationmate.

But it was too late now to stop; the bet had been made. Nevertheless, there were murmurs from different parts of the room.

THE Kid hurried on, fearful of an interruption. Clay's savings were on his mind.

"You were a member of the mapping survey team?" he asked Dor Lassos.

"I was," said the Hixabrod.

"Then you know the planet?"  
"I do."

"You know its geography?" insisted the Kid.

"I do not repeat myself." The eyes of the Hixabrod were chill and withdrawn, almost a little baleful, as they met those of the Kid.

"What kind of a planet is it?" The Kid licked his lips. He was beginning to recover his usual self-assurance. "Is it a large planet?"

"No."

"Is Tarsus a rich planet?"

"No."

"Is it a pretty planet?"

"I did not find it so."

"Get to the point!" snapped Clay with strained harshness.

The Kid glanced at him, savoring this moment. He turned back to the Hixabrod.

"Very well, Dor Lassos," he said, "we get to the meat of the matter. Have you ever heard of Lulungomeena?"

"Yes."

"Have you ever been to Lulungomeena?"

"I have."

"And do you truthfully—" for the first time, a fierce and burning anger flashed momentarily in the eyes of the Hixabrod; the insult the Kid had just unthinkingly given Dor Lassos was a deadly one—"truthfully say that in your considered opinion Lulungomeena is the most wonderful place in the Universe?"

Dor Lassos turned his gaze away from him and let it wander over the rest of the room. Now, at last, his contempt for all there was plain to be read on his face.

"Yes, it is," said Dor Lassos.

**H**E rose to his feet at the head of the stunned group around the table. From the pile of cash he extracted a thousand credits, then passed the remainder, along with the two account books and the vouchers, to Clay. Then he took one step toward the Kid.

He halted before him and offered his hands to the man—palms up, the tips of his fingers a scant couple of inches short of the Kid's face.

"My hands are clean," he said.

His fingers arced; and, suddenly, as we watched, stubby, gleaming claws shot smoothly from those fingertips to tremble lightly against the skin of the Kid's face.

"Do you doubt the truthfulness of a Hixabrod?" his robot voice asked.

The Kid's face was white and his cheeks hollowed in fear. The needle points of the claws were very close to his eyes. He swallowed once.

"No—" he whispered.

The claws retracted. The hands returned to their owner's sides. Once more completely withdrawn and impersonal, Dor Lassos turned and bowed to us all.



"My appreciation of your courtesy," he said, the metallic tones of his voice loud in the silence.

Then he turned and, marching like a metronome, disappeared through the doorway of the recreation room and off in the direction of his quarters.

"**A**ND so we part," said Clay Harbank as we shook hands. "I hope you find the Dorsai Planets as welcome as I intend to find Lulungomeena."



I grumbled a little. "That was plain damn foolishness. You didn't have to buy me out as well."

"There were more than enough credits for the both of us," said Clay.

It was a month after the bet and the two of us were standing in the Deneb One spaceport. For miles in every direction, the great echoing building of this central terminal stretched around us. In ten minutes I was due to board my ship for the Dorsai Planets.

Clay himself still had several days to wait before one of the infrequent ships to Tarsus would be ready to leave.

"The bet itself was damn foolishness," I went on, determined to find something to complain about. We Dorsai do not enjoy these moments of emotion. But a Dorsai is a Dorsai. I am not apologizing.

"No foolishness," said Clay. For a moment a shadow crossed his face. "You forget that a real gambler bets only on a sure

thing. When I looked into the Hixabrod's eyes, I was sure."

"How can you say 'a sure thing?'"

"The Hixabrod loved his home," Clay said.

I stared at him, astounded. "But you weren't betting on Hixa. Of course he would prefer Hixa to any other place in the Universe. But you were betting on Tarsus—on Lulungomeena—remember?"

The shadow was back for a moment on Clay's face. "The bet was certain. I feel a little guilty about the Kid, but I warned him that gambling money never stuck. Besides, he's young and I'm getting old. I couldn't afford to lose."

"Will you come down out of the clouds," I demanded, "and explain this thing? Why was the

bet certain? What was the trick, if there was one?"

"The trick?" repeated Clay. He smiled at me. "The trick was that the Hixabrod could not be otherwise than truthful. It was all in the name of my birthplace —Lulungomeena."

He looked at my puzzled face and put a hand on my shoulder.

"You see, Mort," he said quietly, "it was the name that fooled everybody. Lulungomeena stands for something in my language. But not for any city or town or village. Everybody on Tarsus has his own Lulungomeena. Everybody in the Universe has."

"How do you figure that, Clay?"

"It's a word," he explained. "A word in the Tarsusian language. It means 'home.'"

—GORDON R. DICKSON

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## THE MAN WHO KNEW

Bock in 1893, while other tourists were poing to see Little Egypt's famous donce, a shrewd young chop instead bought sheets of commemorative postage stamps. Wise fellow, he later sent his children through college by selling his increasingly valuable hoard one by one. With so mony people soving stamps now, o profit like that is unlikely.

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# For Your Information

By WILLY LEY

## SMALL BODIES NEAR HEAVY PLANETS

ONLY a few issues back, I devoted a portion of this column to the moons of Mars, prompted by repeated questions from readers who wondered whether they might not actually be Martian space stations, possibly still active, but more likely abandoned for ages. Well, they are unquestionably small natural moons.

The reason I have to return



to them today is an interesting thought advanced by the German astronomer Professor Dr. Werner Schaub, a former president of the *Gesellschaft für Weltraumforschung*, the new German Rocket Society. In fact, Prof. Schaub spoke about his idea for the first time at a regional meeting of this society in May, 1953. Even more to the point is the fact that his idea grew out of a study of the forces which will act on a space station's structure.

The idea is that the inner moon of Mars might be slowly—very slowly indeed—disintegrating under our very eyes. Professor Schaub is careful to call this a "working hypothesis," but until it might be demolished by a detailed mathematical analysis it sounds like a good one.

However, a little background is needed first.

As some readers are likely to know, the two small moons of Mars were discovered in August, 1877, by Asaph Hall with the 26-inch telescope of the Naval Observatory. The discovery was a great surprise, not only because of the oft-told story of their "prediction" by Dean Swift, but because the two satellites of Mars were strange in several respects.

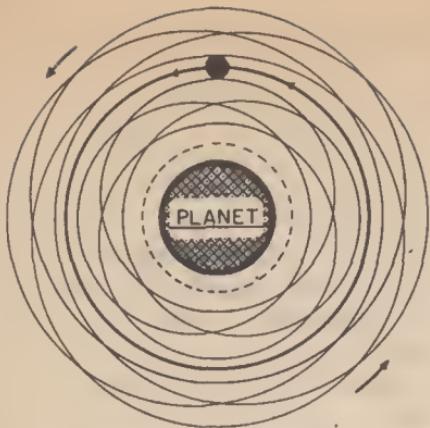
They were tiny, appearing as luminous dots in even the biggest

telescopes. Present estimates—which are a downward revision of earlier guesses—assign a diameter of not more than 10 miles to the inner moon (Phobos) and about 5 miles to the outer (Deimos).

They also were most unusually close to their planet, the distance from the Martian surface to the outer moon being only 12,500 miles and, from the surface to the inner moon, a mere 3700 miles, about the width of the Atlantic Ocean. This unheard-of nearness means that Phobos races around Mars in 7 hours and 39 minutes; its orbital velocity is 1.32 miles per second.

The latter figure, incidentally, shows the weakness of the gravitational field of Mars. If the same moon circled Earth at the same distance from the Earth's center (5800 miles), it would be 1850 miles from the surface and would need an orbital velocity of about 4 miles per second to stay in its orbit. Because the moonlet would need this much more orbital velocity to balance the Earth's stronger pull, it would also complete a full revolution in a much shorter time, namely a little more than  $2\frac{1}{2}$  hours.

It took half a century, counting from the original discovery by Asaph Hall, to find out that the orbital velocity of Phobos



A small moon circling its planet near Roche's Limit, losing portions of its surface due to the tidal forces of the planet. The dotted line around the planet indicates the approximate limits of its atmosphere. The heavy circle is the orbit of the satellite. The fine lines show the orbits of the separated particles.

*is slowly increasing!* Such an increase in orbital velocity can mean only one thing—the distance of Phobos from Mars is slowly decreasing. As I understand it, the decrease of the distance has not actually been measured yet, but the increase in speed has. It probably is easier to observe a small increase of the orbital velocity than a tiny shrinkage of the orbital distance. But that the two go together is established beyond a doubt.

The next question, of course, is "Why?"

Generally speaking, a moon will increase its speed if it finds a small amount of resistance

along its orbit. This statement may seem paradoxical to somebody not used to the workings of celestial mechanics, but it is true just the same.

The first result of finding some resistance along the orbit would be to slow the movement of the moon. But that would result in the moon no longer having enough speed to balance the pull of the planet for the distance at which it is located. The planet could pull it a little nearer, but in "falling" toward the planet, speed would be gained and the moon would establish a new balance slightly closer to the planet at a *slightly higher speed*. So if cosmic dust got in the way of Phobos, the observed increase in orbital velocity could be explained. And from the observed increase in speed, one could calculate the density of the cosmic dust which caused it.

**S**UCH calculations were made by Kerr and Whipple, but no acceptable results could be obtained. If cosmic dust near Mars were as thick as required, we should be able to see it. After all, one cannot very well postulate that the dust is only in the moon's orbit and not anywhere else. Besides, dust of the proper density and spread through a large volume of space, as would be likely, should slow down

Deimos, too, but Deimos is not affected. If Mars had as much water as our own planet, one might try to explain the misbehavior of Phobos by tidal action—but Mars does not have much water.

Yet this apparently impossible assumption of a cosmic dust handicap for Phobos, which can be found only in and near its orbit, is Dr. Werner Schaub's "working hypothesis." One can make this assumption if it is also assumed that the dust comes from Phobos itself, for Phobos is rather close to Roche's Limit.

Roche's Limit, as has been stated many a time in many science fiction stories, is the distance inside of which a moon cannot exist any more, since the gravitational force of the planet would break it up and scatter the remains along its orbit to form a ring. This explanation is essentially true, except that things aren't quite that simple. The distance  $R'$  (Roche's Limit) for a given planet is

$$R' = 2.4554 R$$

(where  $R$  is the planet radius) measured from the planet's center if both planet and moon have the same specific gravity. If they haven't, the figure must be modified by multiplying it with the cube root of the ratio of their densities.

Without such modification,  $R'$

equals 9700 miles for our own planet and 5155 miles for Mars. Since Phobos is 5800 miles from the center of Mars, its distance is about 2.75  $R$ , so that, for equal densities, it would be safely outside of  $R'$ . If Phobos were a ball of liquid, it would be badly deformed even where it is, but it is obviously some kind of rigid rock.

Now there is another kind of limit proposed by Dr. Schaub specifically for rigid bodies and bodies with considerable structural strength, such as space stations, which lies at 1.3  $R$ . At a distance of 3/10th of a planet radius from the planet's surface, the tidal forces of the planet become stronger than the gravitation of the moon at its surface. The result is that the existence of the moon itself is not endangered, but that everything lying around loose will be pulled off its surface!

Like Roche's Limit of 2.45, this limit of 1.3 is modified by the ratio of the densities of the two bodies involved. To make Phobos fall inside this limit, or rather to expand this limit to the distance of Phobos, one would have to assume that its overall density is half of that of an equal volume of water. If Phobos consists of very porous rock, this is possible. In this case, nothing could lie around on its surface, anchored

only by the moonlet's gravitational pull. But whatever has been pulled off by Mars would not fall to the planet at once. It would form two very tenuous rings, one outside the moon and one inside. Each one of these tenuous rings would have a thickness about equal to the diameter of the moon and a width of at most three times the diameter of the moon. (See diagram.)

**A**T first, the moon would move in an empty space between the two rings, but this space would not remain empty for long. As soon as there are enough particles in the rings, there will be collisions. Normally, when two particles collide, one can expect both of them to lose speed, so that they would cross from the outer ring into the inner ring. The outer ring, then, would steadily lose mass to the inner ring—which is likely to get into Phobos' way while crossing over—but the inner ring would lose mass in the same manner. If a particle collision occurs in the inner ring, the new orbits of the particles can be eccentric enough to graze the atmosphere of Mars, which obviously means their end as independent molecular satellites.

More "loose mass" on Phobos will be created steadily, some of it by meteorite impact, most of it

probably by cosmic rays. Their microscopic impacts cause the crystalline structure of the surface rocks to decay, thus creating dust. This is happening on our moon, too, but there the dust stays where it is, protecting the layers of rock underneath. On Phobos, if Dr. Schaub is right, the dust would be pulled off the satellite as quickly as it is formed.

It is admittedly somewhat far-fetched to extend the second limit so far out by assuming an unusually low density for the satellite. But remember that Phobos does show the acceleration which started the whole trend of thought.

And it is, at any event, interesting that Jupiter V, the moon closest to the giant planet, shows a similar acceleration. Jupiter V is also comparatively small (estimated diameter is 100 miles) and moves at a distance of 112,600 miles from Jupiter's center or about 70,000 miles from its "surface."  $R'$  for Jupiter (unmodified) is 108,800 miles. In short, the situation is about the same—theoretically, the moon just manages to stay outside of Roche's Limit, but if we knew all the other factors, most especially the satellite's density, we might say otherwise.

Let's close with a look at our planned space station in Dr. von Braun's two-hour orbit, 1075

miles above sea level. This is a geocentric distance of 5025 miles and R' for Earth, as mentioned, is 9700 miles. The space station would be well within Roche's Limit, but would hold together easily because of its structural strength. (Just to keep air inside, it has to have a higher structural strength than required to withstand the forces exerted by the Earth.) Since the space station's distance amounts to 1.27 planet radii and Dr. Schaub's limit is 1.3 R, the space station would also be inside that limit.

This would not endanger people in spacesuits working near it in space. Even if not hooked to a line, they would have personal rocket propulsion guns which can easily overcome the forces involved.

But the Earth would keep the space station spotlessly clean by attracting any debris that might accumulate on it—a cosmic vacuum cleaner, you might say.

### **EUROPE'S UNKNOWN POISONOUS LIZARD**

**A**T about the time you read this, West Germans and West Berliners will be able to buy and read a German edition of my book *The Lungfish, the Dodo and the Unicorn*. In East Germany, it will indubitably be banned because animals fail to

conform to Marxist-Leninist-Stalinist principles (it being known, furthermore, that Beria occasionally petted animals, never tractors). I did not do the translation myself, but I checked it and in the course of this work I came across some old correspondence and notes which had half-slipped my memory. They dealt with the question of poisonous animals in general and specifically with the number of poisonous lizards.

One hundred years ago, zoological textbooks were quite definite on that point. The majority of poisonous creatures were invertebrates—spiders, scorpions, centipedes and certain true insects. Of the vertebrate animals, only some snakes were known to be poisonous, although a few fishes were said to have poisonous spikes, something that still needed verification (which has been supplied in the meantime). No lizard or amphibian had any venom, the book said.

As for amphibians, it became known during the following fifty years that the skin secretions of several varieties are rather poisonous and that one frog (the beautiful "painter frog," *Dendrobates tinctorius* of Central and northern South America) is dangerous to handle. It can kill you if you happen to have fresh cuts on your hands. Logically,

the natives use its skin secretion for a highly effective arrowhead poison.

About 1900, the textbooks, after much reluctance, suspicion

one-third the length one would expect a lizard's tail to be. The legs are short and small and the whole animal looks as if it were normally a dirty black, but has



**Heloderma suspectum.**

and cross-checking, admitted that there is a poisonous lizard. The lizard thus accepted is, of course, the Gila monster, a native of Arizona and New Mexico. The popular name is derived from the name of the Gila (pronounced Hee-la) River. The scientific name is *Heloderma suspectum*.

It is a creature that nobody who has seen one will ever forget, partly because of its coloration, partly because its shape is rather different from the ideas evoked by the word "lizard." Yes, it has a head, a body, a tail and four legs, but that's as far as the resemblance goes. The head is flat, the body like a stuffed sausage, the tail more so and only about

been spattered with brick-red paint.

While normally lazy, the Gila monster can develop a fit of temper at short notice. It will hiss loudly and can jump, especially making a 180 degree turn in one jump that puts the head where the tail was a moment ago. And when it bites, it does not strike like a snake. It is a bite more like that of a dog and it will hang on for as long as ten minutes.

**N**OBODY seems to know who produced the first comprehensive description of this lizard. European works name Francesco Hernandez, body physician of

Philip II of Spain, as the "discoverer"<sup>(1)</sup>, but I have some doubts about that. Hernandez collected — from 1593-1600 — in Mexico, where the Gila monster does not live.

Even though *Nueva España*, if it could be pinned down on a map, probably comprised Gila-monster habitat, Hernandez hardly traveled that far west. It is far more likely that he "discovered" Gila monster's close relative, the Mexican Beaded Lizard (*Heloderma horridum*), which is similar in appearance, but of a more slender build, somewhat larger (or at least longer) and with bright yellow blotches on a shining dark background. It was this Mexican version that forced its way into the textbooks as the second poisonous lizard, though it was the first historically.

Among the venomous snakes, there are some with hollow poison fangs and some with grooved poison fangs. The two types of *Heloderma* have grooved teeth, but unlike those of the venomous snakes, these teeth are not in front of the mouth and are in the lower jaw. So is the poison gland which supplies them. Another

difference is that they need time to inject their poison, and a man bitten by *Heloderma* may get away with "just a bite" if he succeeds in tearing the reptile off at once. Normally, the Gila monster has little use for its poison apparatus, for its favorite food seems to be bird and snake eggs.

So far we have stayed in the territory of well-known and established facts. The story has many loose ends, since very many facts about the two *Helodermas* are still unknown. But the most interesting loose end is that they may have unknown relatives elsewhere.

One such suspected relative has a name of its own, *Lanthanotus*, and it lives, of all places, on Borneo. The trouble is that very little is known about it—so little, in fact, that we cannot yet say with certainty whether *Lanthanotus* actually is a close relative to the Gila monster.

Another suspected relative might live in Europe. The trouble here is the same as with *Lanthanotus*, but to a higher degree—it hasn't been discovered yet.

All along the European Alps, but especially in the sections belonging to Switzerland and to Austria, there has been talk for centuries about a rare, small and dangerous animal. It is said to be some two feet long—which is

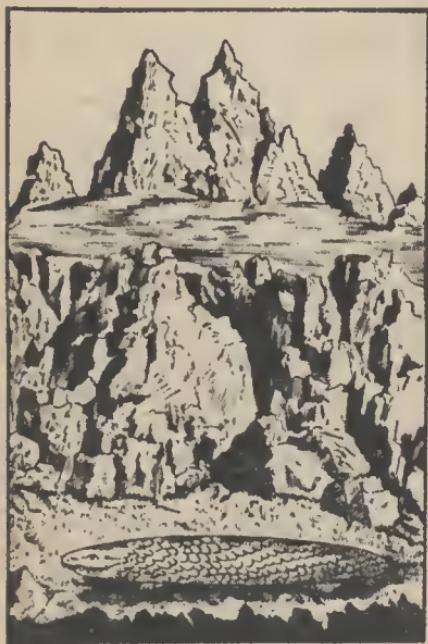
<sup>1</sup> Doctor Hernandez' work never appeared in its original Latin version. It was printed in 1615 as *Quattro libros de la naturaleza y virtutes de las plantas y animales que estan recevidos en el uso de medicina en la nueva España*.

slightly larger than *Heloderma*—and of the general appearance of a fat lizard. It is reported to hiss and whistle, and its bite is described as deadly. Witnesses claim that it can make jumps without preparation. Since the Alpine farmers and cattle ranchers were not in the habit of traveling, the animal has a name

“Worm with Paws” and it may be added that the term “worm” is not used in its zoological sense among those peoples, but a general term for anything alive of wormlike or snakelike shape.

IN some older works, the existence of this animal is mentioned as a matter of course. The chronicle of a monastery in the Swiss Canton of Uri referred to it as occurring in the vicinity. A “Pocketbook for Amateur Naturalists and Gentleman Hunters,” printed in 1836, even printed a picture (not a good one) and a Bavarian writer by the name of Kobell listed the animal in 1859 as one “permitted to be hunted.” He did not shoot one himself, but knew people who had.

There is one more curious “document.” In the Bavarian and Austrian Alps, it is customary to erect little monuments to people who perished because of avalanches or falling stones as close as possible to the spot where they died. One of these monuments—their local name is *Marterln*—has the inscription “In sudden fright died here, pursued by jumping worms, Hans Fuchs of Unken, 1779.” The painting shows the dead Hans Fuchs lying on the ground, with two large lizards perched on a nearby rock. These two lizards are ordinary



The only published picture of a *Tatzelwurm*, dating from 1836.

of its own in almost every valley. The most common names are *Stollwurm*, *Springwurm* and *Tatzelwurm*, which can be translated, in the same order, as “Cave Worm,” “Jumping Worm” and

in shape, just large; obviously the local artist not only lacked talent, but also a model.

The animal is still undiscovered. For some time, from about 1870 to 1930, zoologists were inclined to consider the whole story a legend. In 1930, a scientific publication began to collect eye-witness reports and got around two dozen first-hand stories, most of the reporters stating emphatically that the animal was not an otter, which had been cited as an explanation of the legend by some. But none of the reporters had any proof—no skins, no skulls, not even photographs.

At about that time, somebody sent me a clipping from a small provincial Austrian newspaper, saying in so many words that the late Austrian General von Poser had killed two of the animals and that their bodies were preserved in Castle Grubhof near the city of Lofer.

I had no idea where Lofer was located (I still don't know), but trusted that the Austrian Post Office did. Nor did I know who owned the castle at that time, but since every castle has a Superintendent General, I put that on my letter, which was aimed at somebody who could tell horses and cattle apart, but had never tried to distinguish a lizard from a newt.

The result was similar to the scene they used to have in the early talkies, where an American traveler in Hongkong addresses a Chinese in pidgin and gets an answer with an Oxford accent. A Mr. Schmidtmann informed me that the two preserved animals were specimens of the East North African monitor, probably *Varanus niloticus*, shot by General von Poser during a vacation in Egypt. Besides, Mr. Schmidtmann added, even though some witnesses claim they know an otter when they see one, the reports still concern otters.

**A**BOUT a month later, I read an article by the former Austrian Court Councillor, Dr. Nicolussi, in which he stated that, after examining all the evidence, he felt so certain about the existence of the animal and its essential relationship to the American Gila monster that he proposed the scientific name of *Heloderma europaeum*. At about that time a Swiss photographer took a picture of something that might be the animal, half hidden under dead leaves, but a search failed to yield results.

One more item: After the first edition of my book *The Lungfish and the Unicorn* had been published, I received a letter from a reader in Virginia who, in 1900, had seen a big lizard in the Ital-

ian Alps. His friends to whom he told the tale scoffed, so he went back to the same spot the next day, saw two of the big lizards and caught one with a butterfly net. When dumped at the inn, the lizard scared him so much with loud hissing that he caught it in the net again, obtained a glass jar and two liters of pure alcohol from the local druggist and drowned the animal in the liquid. Unfortunately he left the specimen in the small Italian town. But he remembered that it was 20 inches long, which is at least twice the length of any other lizard known to occur in that region.

Well? So? Nobody knows. As in many other places in science, the motto which applies is "wait and see."

I'm afraid the same is true of the letter section of this department. I've used up all my room, so the questions from readers will have to wait until next month. Sorry.

—WILLY LEY

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# THE BIG TRIP UP YONDER

By KURT VONNEGUT, JR.

Illustrated by KOSSIN

*If it was good enough for your grandfather, forget it . . . it is  
much too good for anyone else!*

**G**RAMPS FORD, his chin resting on his hands, his hands on the crook of his cane, was staring irascibly at the five-foot television screen that dominated the room. On the screen, a news commentator was summarizing the day's happenings. Every thirty seconds or so, Gramps would jab the floor with his canetip and shout, "Hell, we

did that a hundred years ago!" Emerald and Lou, coming in from the balcony, where they had been seeking that 2185 A.D. rarity—privacy—were obliged to take seats in the back row, behind Lou's father and mother, brother and sister-in-law, son and daughter-in-law, grandson and wife, granddaughter and husband, great-grandson and wife, nephew

and wife, grandnephew and wife, great-grandniece and husband, great-grandnephew and wife—and, of course, Gramps, who was in front of everybody. All save Gramps, who was somewhat withered and bent, seemed, by pre-anti-gerasone standards, to be about the same age—somewhere in their late twenties or early thirties. Gramps looked older because he had already reached 70 when anti-gerasone was invented. He had not aged in the 102 years since.

"Meanwhile," the commentator was saying, "Council Bluffs, Iowa, was still threatened by stark tragedy. But 200 weary rescue workers have refused to give up hope, and continue to dig in an effort to save Elbert Hagedorn, 183, who has been wedged for two days in a . . ."

"I wish he'd get something more cheerful," Emerald whispered to Lou.

**SILENCE!**" cried Gramps. "Next one shoots off his big bazoo while the TV's on is gonna find hisself cut off without a dollar—" his voice suddenly softened and sweetened—"when they wave that checkered flag at the Indianapolis Speedway, and old Gramps gets ready for the Big Trip Up Yonder."

He sniffed sentimentally, while his heirs concentrated despera-

ly on not making the slightest sound. For them, the poignancy of the prospective Big Trip had been dulled somewhat, through having been mentioned by Gramps about once a day for fifty years.

"Dr. Brainard Keyes Bullard," continued the commentator, "President of Wyandotte College, said in an address tonight that most of the world's ills can be traced to the fact that Man's knowledge of himself has not kept pace with his knowledge of the physical world."

"Hell!" snorted Gramps. "We said that a hundred years ago!"

"In Chicago tonight," the commentator went on, "a special celebration is taking place in the Chicago Lying-in Hospital. The guest of honor is Lowell W. Hitz, age zero. Hitz, born this morning, is the twenty-five-millionth child to be born in the hospital." The commentator faded, and was replaced on the screen by young Hitz, who squalled furiously.

"Hell!" whispered Lou to Emerald. "We said that a hundred years ago."

"I heard that!" shouted Gramps. He snapped off the television set and his petrified descendants stared silently at the screen. "You, there, boy—"

"I didn't mean anything by it, sir," said Lou, aged 103.

"Get me my will. You know

where it is. You kids *all* know where it is. Fetch, boy!" Gramps snapped his gnarled fingers sharply.

Lou nodded dully and found himself going down the hall, picking his way over bedding to Gramps' room, the only private room in the Ford apartment. The other rooms were the bathroom, the living room and the wide windowless hallway, which was originally intended to serve as a dining area, and which had a kitchenette in one end. Six mattresses and four sleeping bags were dispersed in the hallway and living room, and the daybed, in the living room, accommodated the eleventh couple, the favorites of the moment.

On Gramps' bureau was his will, smeared, dog-eared, perforated and blotched with hundreds of additions, deletions, accusations, conditions, warnings, advice and homely philosophy. The document was, Lou reflected, a fifty-year diary, all jammed onto two sheets—a garbled, illegible log of day after day of strife. This day, Lou would be disinherited for the eleventh time, and it would take him perhaps six months of impeccable behavior to regain the promise of a share in the estate. To say nothing of the daybed in the living room for Em and himself.

"Boy!" called Gramps.

"Coming, sir." Lou hurried back into the living room and handed Gramps the will.

"Pen!" said Gramps.

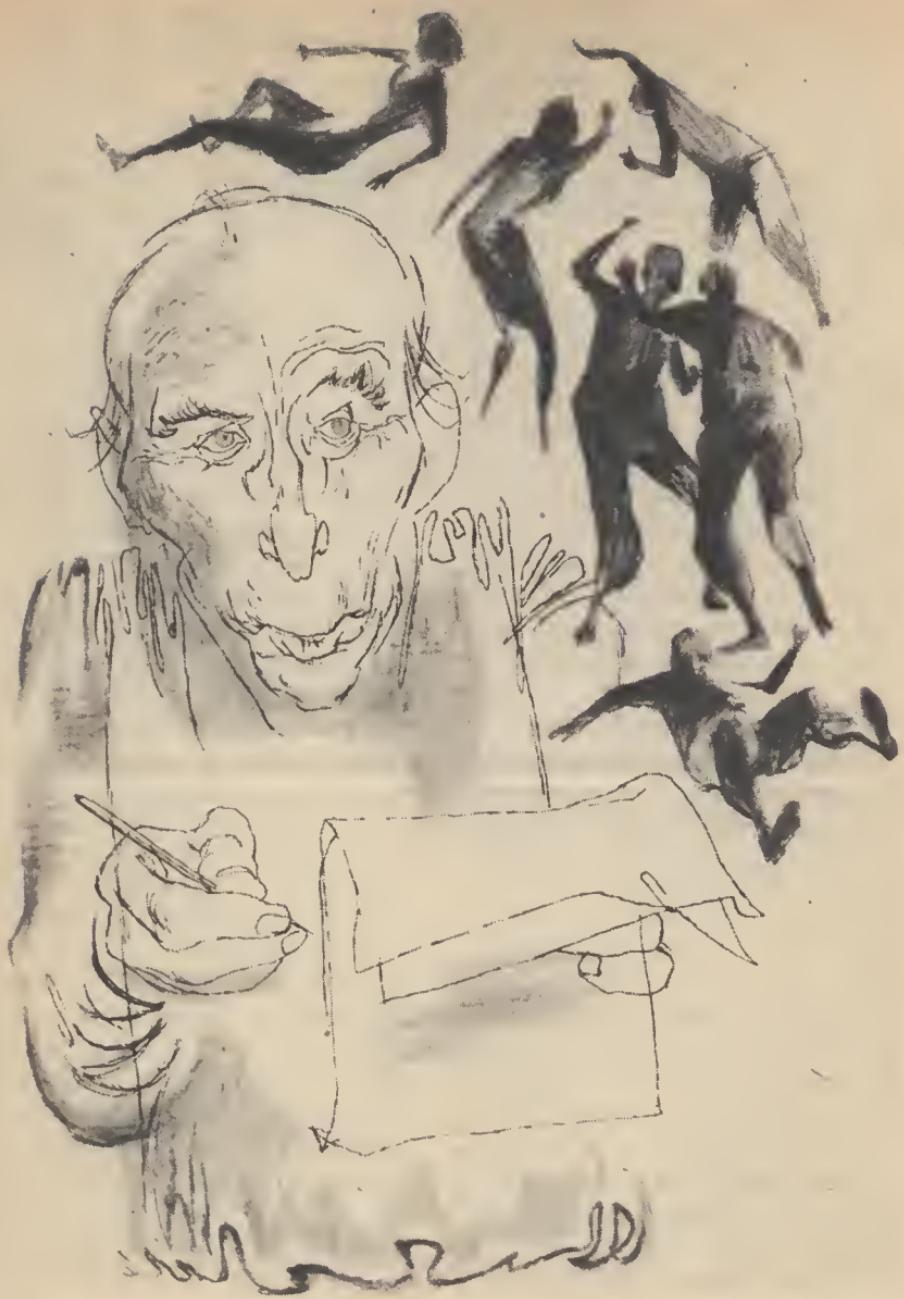
HE was instantly offered eleven pens, one from each couple.

"Not *that* leaky thing," he said, brushing Lou's pen aside. "Ah, there's a nice one. Good boy, Willy." He accepted Willy's pen. That was the tip they had all been waiting for. Willy, then—Lou's father—was the new favorite.

Willy, who looked almost as young as Lou, though he was 142, did a poor job of concealing his pleasure. He glanced shyly at the daybed, which would become his, and from which Lou and Emerald would have to move back into the hall, back to the worst spot of all by the bathroom door.

Gramps missed none of the high drama he had authored and he gave his own familiar role everything he had. Frowning and running his finger along each line, as though he were seeing the will for the first time, he read aloud in a deep portentous monotone, like a bass note on a cathedral organ.

"I, Harold D. Ford, residing in Building 257 of Alden Village, New York City, Connecticut, do hereby make, publish and declare this to be my last Will and Testament, revoking any and all form-



THE BIG TRIP UP YONDER

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er wills and codicils by me at any time heretofore made." He blew his nose importantly and went on, not missing a word, and repeating many for emphasis—repeating in particular his ever-more-elaborate specifications for a funeral.

At the end of these specifications, Gramps was so choked with emotion that Lou thought he might have forgotten why he'd brought out the will in the first place. But Gramps heroically brought his powerful emotions under control and, after erasing for a full minute, began to write and speak at the same time. Lou could have spoken his lines for him, he had heard them so often.

"I have had many heartbreaks ere leaving this vale of tears for a better land," Gramps said and wrote. "But the deepest hurt of all has been dealt me by—" He looked around the group, trying to remember who the malefactor was.

Everyone looked helpfully at Lou, who held up his hand resignedly.

Gramps nodded, remembering, and completed the sentence—"my great-grandson, Louis J. Ford."

"Grandson, sir," said Lou.

"Don't quibble. You're in deep enough now, young man," said Gramps, but he made the change. And, from there, he went without a misstep through the phrasing of

the disinheritance, causes for which were disrespectfulness and quibbling.

**I**N the paragraph following, the paragraph that had belonged to everyone in the room at one time or another, Lou's name was scratched out and Willy's substituted as heir to the apartment and, the biggest plum of all, the double bed in the private bedroom.

"So!" said Gramps, beaming. He erased the date at the foot of the will and substituted a new one, including the time of day. "Well—time to watch the McGarvey Family." The McGarvey Family was a television serial that Gramps had been following since he was 60, or for a total of 112 years. "I can't wait to see what's going to happen next," he said.

Lou detached himself from the group and lay down on his bed of pain by the bathroom door. Wishing Em would join him, he wondered where she was.

He dozed for a few moments, until he was disturbed by someone stepping over him to get into the bathroom. A moment later, he heard a faint gurgling sound, as though something were being poured down the washbasin drain. Suddenly, it entered his mind that Em had cracked up, that she was in there doing some-

thing drastic about Gramps.

"Em?" he whispered through the panel. There was no reply, and Lou pressed against the door. The worn lock, whose bolt barely engaged its socket, held for a second, then let the door swing inward.

"Morty!" gasped Lou.

Lou's great-grandnephew, Mortimer, who had just married and brought his wife home to the Ford menage, looked at Lou with consternation and surprise. Morty kicked the door shut, but not before Lou had glimpsed what was in his hand—Gramps' enormous economy-size bottle of anti-gerasone, which had apparently been half-emptied, and which Morty was refilling with tap water.

A moment later, Morty came out, glared defiantly at Lou and brushed past him wordlessly to rejoin his pretty bride.

Shocked, Lou didn't know what to do. He couldn't let Gramps take the mousetrapped anti-gerasone—but, if he warned Gramps about it, Gramps would certainly make life in the apartment, which was merely insufferable now, harrowing.

Lou glanced into the living room and saw that the Fords, Emerald among them, were momentarily at rest, relishing the botches that the McGarveys had made of *their* lives. Stealthily, he

went into the bathroom, locked the door as well as he could and began to pour the contents of Gramps' bottle down the drain. He was going to refill it with full-strength anti-gerasone from the 22 smaller bottles on the shelf.

The bottle contained a half-gallon, and its neck was small, so it seemed to Lou that the emptying would take forever. And the almost imperceptible smell of anti-gerasone, like Worcestershire sauce, now seemed to Lou, in his nervousness, to be pouring out into the rest of the apartment, through the keyhole and under the door.

**T**HE bottle gurgled monotonously. Suddenly, up came the sound of music from the living room and there were murmurs and the scraping of chairlegs on the floor. "Thus ends," said the television announcer, "the 29-121st chapter in the life of your neighbors and mine, the McGarveys." Footsteps were coming down the hall. There was a knock on the bathroom door.

"Just a sec," Lou cheerily called out. Desperately, he shook the big bottle, trying to speed up the flow. His palms slipped on the wet glass, and the heavy bottle smashed on the tile floor.

The door was pushed open, and Gramps, dumbfounded, star-

ed at the incriminating mess.

Lou felt a hideous prickling sensation on his scalp and the back of his neck. He grinned engagingly through his nausea and, for want of anything remotely resembling a thought, waited for Gramps to speak.

"Well, boy," said Gramps at last, "looks like you've got a little tidying up to do."

And that was all he said. He turned around, elbowed his way through the crowd and locked himself in his bedroom.

The Fords contemplated Lou in incredulous silence a moment longer, and then hurried back to the living room, as though some of his horrible guilt would taint them, too, if they looked too long. Morty stayed behind long enough to give Lou a quizzical, annoyed glance. Then he also went into the living room, leaving only Emerald standing in the doorway.

Tears streamed over her cheeks. "Oh, you poor lamb—please don't look so awful! It was my fault. I put you up to this with my nagging about Gramps."

"No," said Lou, finding his voice, "really you didn't. Honest, Em, I was just—"

"You don't have to explain anything to me, hon. I'm on your side, no matter what." She kissed him on one cheek and whispered

in his ear, "It wouldn't have been murder, hon. It wouldn't have killed him. It wasn't such a terrible thing to do. It just would have fixed him up so he'd be able to go any time God decided He wanted him."

"What's going to happen next, Em?" said Lou hollowly. "What's he going to do?"

**L**OU and Emerald stayed fearfully awake almost all night, waiting to see what Gramps was going to do. But not a sound came from the sacred bedroom. Two hours before dawn, they finally dropped off to sleep.

At six o'clock, they arose again, for it was time for their generation to eat breakfast in the kitch- enette. No one spoke to them. They had twenty minutes in which to eat, but their reflexes were so dulled by the bad night that they had hardly swallowed two mouthfuls of egg-type pro- cessed seaweed before it was time to surrender their places to their son's generation.

Then, as was the custom for whoever had been most recently disinherited, they began preparing Gramps' breakfast, which would presently be served to him in bed, on a tray. They tried to be cheerful about it. The toughest part of the job was having to handle the honest-to-God eggs and bacon and oleomargarine,

on which Gramps spent so much of the income from his fortune.

"Well," said Emerald, "I'm not going to get all panicky until I'm sure there's something to be panicky about."

"Maybe he doesn't know what it was I busted," Lou said hopefully.

"Probably thinks it was your watch crystal," offered Eddie, their son, who was toying apathetically with his buckwheat-type processed sawdust cakes.

"Don't get sarcastic with your father," said Em, "and don't talk with your mouth full, either."

"I'd like to see anybody take a mouthful of this stuff and *not* say something," complained Eddie, who was 73. He glanced at the clock. "It's time to take Gramps his breakfast, you know."

"Yeah, it is, isn't it?" said Lou weakly. He shrugged. "Let's have the tray, Em."

"We'll both go."

Walking slowly, smiling bravely, they found a large semi-circle of long-faced Fords standing around the bedroom door.

Em knocked. "Gramps," she called brightly, "*break*-fast is *rea*-dy."

There was no reply and she knocked again, harder.

The door swung open before her fist. In the middle of the room, the soft, deep, wide, cano-

pied bed, the symbol of the sweet by-and-by to every Ford, was empty.

A sense of death, as unfamiliar to the Fords as Zoroastrianism or the causes of the Sepoy Mutiny, stilled every voice, slowed every heart. Awed, the heirs began to search gingerly, under the furniture and behind the drapes, for all that was mortal of Gramps, father of the clan.

**B**UT Gramps had left not his earthly husk but a note, which Lou finally found on the dresser, under a paperweight which was a treasured souvenir from the World's Fair of 2000. Unsteadily, Lou read it aloud:

"Somebody who I have sheltered and protected and taught the best I know how all these years last night turned on me like a mad dog and diluted my anti-gerasone, or tried to. I am no longer a young man. I can no longer bear the crushing burden of life as I once could. So, after last night's bitter experience, I say good-by. The cares of this world will soon drop away like a cloak of thorns and I shall know peace. By the time you find this, I will be gone."

"Gosh," said Willy brokenly, "he didn't even get to see how the 5000-mile Speedway Race was going to come out."

"Or the Solar Series," Eddie

said, with large mournful eyes.

"Or whether Mrs. McGarvey got her eyesight back," added Morty.

"There's more," said Lou, and he began reading aloud again: "I, Harold D. Ford, etc., do hereby make, publish and declare this to be my last Will and Testament, revoking any and all former wills and codicils by me at any time heretofore made."

"No!" cried Willy. "Not another one!"

"I do stipulate," read Lou, "that all of my property, of whatsoever kind and nature, not be divided, but do devise and bequeath it to be held in common by my issue, without regard for generation, equally, share and share alike."

"Issue?" said Emerald.

Lou included the multitude in a sweep of his hand. "It means we all own the whole damn shootin' match."

Each eye turned instantly to the bed.

"Share and share alike?" asked Morty.

"Actually," said Willy, who was the oldest one present, "it's just like the old system, where the oldest people head up things with their headquarters in here and—"

"I like *that!*" exclaimed Em. "Lou owns as much of it as you do, and I say it ought to be for

the oldest one who's still working. You can snooze around here all day, waiting for your pension check, while poor Lou stumbles in here after work, all tuckered out, and—"

"How about letting somebody who's never had *any* privacy get a little crack at it?" Eddie demanded hotly. "Hell, you old people had plenty of privacy back when you were kids. I was born and raised in the middle of that goddamn barracks in the hall! How about—"

"Yeah?" challenged Morty. "Sure, you've all had it pretty tough, and my heart bleeds for you. But try honeymooning in the hall for a real kick."

"Silence!" shouted Willy imperiously. "The next person who opens his mouth spends the next sixth months by the bathroom. Now clear out of my room. I want to think."

A vase shattered against the wall, inches above his head.

**I**N the next moment, a free-for-all was under way, with each couple battling to eject every other couple from the room. Fighting coalitions formed and dissolved with the lightning changes of the tactical situation. Em and Lou were thrown into the hall, where they organized others in the same situation, and stormed back into the room.

After two hours of struggle, with nothing like a decision in sight, the cops broke in, followed by television cameramen from mobile units.

For the next half-hour, patrol wagons and ambulances hauled away Fords, and then the apartment was still and spacious.

An hour later, films of the last stages of the riot were being televised to 500,000,000 delighted viewers on the Eastern Seaboard.

In the stillness of the three-room Ford apartment on the 76th floor of Building 257, the television set had been left on. Once more the air was filled with the cries and grunts and crashes of the fray, coming harmlessly now from the loudspeaker.

The battle also appeared on the screen of the television set in the police station, where the Fords and their captors watched with professional interest.

Em and Lou, in adjacent four-by-eight cells, were stretched out peacefully on their cots.

"Em," called Lou through the partition, "you got a washbasin all your own, too?"

"Sure. Washbasin, bed, light—the works. And we thought *Gramps'* room was something. How long has this been going on?" She held out her hand. "For the first time in forty years, hon, I haven't got the shakes—look at me!"

"Cross your fingers," said Lou. "The lawyer's going to try to get us a year."

"Gee!" Em said dreamily. "I wonder what kind of wires you'd have to pull to get put away in solitary?"

"All right, pipe down," said the turnkey, "or I'll toss the whole kit and caboodle of you right out. And first one who lets on to anybody outside how good jail is ain't never getting back in!"

The prisoners instantly fell silent.

THE living room of the apartment darkened for a moment as the riot scenes faded on the television screen, and then the face of the announcer appeared, like the Sun coming from behind a cloud. "And now, friends," he said, "I have a special message from the makers of anti-gerasone, a message for all you folks over 150. Are you hampered socially by wrinkles, by stiffness of joints and discoloration or loss of hair, all because these things came upon you before anti-gerasone was developed? Well, if you are, you need no longer suffer, need no longer feel different and out of things.

"After years of research, medical science has now developed Super-anti-gerasone! In weeks—yes, weeks—you can look, feel

and act as young as your great-great-grandchildren! Wouldn't you pay \$5,000 to be indistinguishable from everybody else? Well, you don't have to. Safe, tested' *Super-anti-gerasone* costs you only a few dollars a day.

"Write now for your free trial carton. Just put your name and address on a dollar postcard, and mail it to 'Super,' Box 500,000, Schenectady, N. Y. Have you got that? I'll repeat it. 'Super,' Box 500,000 . . ."

Underlining the announcer's words was the scratching of Gramps' pen, the one Willy had given him the night before. He had come in, a few minutes earlier, from the Idle Hour Tavern, which commanded a view of Building 257 from across the square of asphalt known as the Alden Village Green. He had called a cleaning woman to come straighten the place up, then had hired the best lawyer in town to

get his descendants a conviction, a genius who had never gotten a client less than a year and a day. Gramps had then moved the day-bed before the television screen, so that he could watch from a reclining position. It was something he'd dreamed of doing for years.

"Schen-ec-ta-dy," murmured Gramps. "Got it!" His face had changed remarkably. His facial muscles seemed to have relaxed, revealing kindness and equanimity under what had been taut lines of bad temper. It was almost as though his trial package of *Super-anti-gerasone* had already arrived. When something amused him on television, he smiled easily, rather than barely managing to lengthen the thin line of his mouth a millimeter.

Life was good. He could hardly wait to see what was going to happen next.

—KURT VONNEGUT, JR.

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# The holes around Mars

By JEROME BIXBY

*Science said it could not be,  
but there it was. And whoosh  
—look out—here it is again!*

Illustrated by DICK FRANCIS

**S**PACESHIP crews should be selected on the basis of their non-irritating qualities as individuals. No chronic complainers, no hypochondriacs, no bugs on cleanliness—particularly no one-man parties. I speak from bitter experience.

Because on the first expedition to Mars, Hugh Allenby damned

near drove us nuts with his puns. We finally got so we just ignored them.

But no one can ignore that classic last one—it's written right into the annals of astronomy, and it's there to stay.

Allenby, in command of the expedition, was first to set foot outside the ship. As he stepped

down from the airlock of the *Mars I*, he placed that foot on a convenient rock, caught the toe of his weighted boot in a hole in the rock, wrenched his ankle and smote the ground with his pants.

Sitting there, eyes pained behind the transparent shield of his oxygen-mask, he stared at the rock.

**I**T was about five feet high. Ordinary granite — no special shape—and several inches below its summit, running straight through it in a northeasterly direction, was a neat round four-inch hole.

"I'm upset by the *hole* thing," he grunted.

The rest of us scrambled out of the ship and gathered around his plump form. Only one or two of us winced at his miserable double pun.

"Break anything, Hugh?" asked Burton, our pilot, kneeling beside him.

"Get out of my way, Burton," said Allenby. "You're obstructing my view."

Burton blinked. A man constructed of long bones and caution, he angled out of the way, looking around to see what he was obstructing view of.

He saw the rock and the round hole through it. He stood very still, staring. So did the rest of us.

"Well, I'll be damned," said Janus, our photographer. "A hole."

"In a rock," added Gonzales, our botanist.

"Round," said Randolph, our biologist.

"An *artifact*," finished Allenby softly.

Burton helped him to his feet. Silently we gathered around the rock.

Janus bent down and put an eye to one end of the hole. I bent down and looked through the other end. We squinted at each other.

As mineralogist, I was expected to opinionate. "Not drilled," I said slowly. "Not chipped. Not melted. Certainly not eroded."

I heard a rasping sound by my ear and straightened. Burton was scratching a thumbnail along the rim of the hole. "Weathered," he said. "Plenty old. But I'll bet it's a perfect circle, if we measure."

Janus was already fiddling with his camera, testing the cooperation of the tiny distant sun with a light-meter.

"Let us see *weather* it is or not," Allenby said.

**B**URTON brought out a steel tape-measure. The hole was four and three-eighths inches across. It was perfectly circular and about sixteen inches long. And four feet above the ground.

"But why?" said Randolph. "Why should anyone bore a four-inch tunnel through a rock way out in the middle of the desert?"

"Religious symbol," said Janus. He looked around, one hand on his gun. "We'd better keep an eye out—maybe we've landed on sacred ground or something."

"A totem *hole*, perhaps," Allenby suggested.

"Oh, I don't know," Randolph said—to Janus, not Allenby. As I've mentioned, we always ignored Allenby's puns. "Note the lack of ornamentation. Not at all typical of religious articles."

"On Earth," Gonzales reminded him. "Besides, it might be utilitarian, not symbolic."

"Utilitarian, how?" asked Janus.

"An altar for snakes," Burton said dryly.

"Well," said Allenby, "you can't deny that it has its *holy* aspects."

"Get your hand away, will you, Peters?" asked Janus.

I did. When Janus's camera had clicked, I bent again and peered through the hole. "It sights on that low ridge over there," I said. "Maybe it's some kind of surveying setup. I'm going to take a look."

"Careful," warned Janus. "Remember, it may be sacred."

As I walked away, I heard Allenby say, "Take some scrapings

from the inside of the hole, Gonzales. We might be able to determine if anything is kept in it . . ."

One of the stumpy, purplish, barrel-type cacti on the ridge had a long vertical bite out of it . . . as if someone had carefully carved out a narrow U-shaped section from the top down, finishing the bottom of the U in a neat semicircle. It was as flat and clean-cut as the inside surface of a horseshoe magnet.

I hollered. The others came running. I pointed.

"Oh, my God!" said Allenby. "Another one."

The pulp of the cactus in and around the U-hole was dried and dead-looking.

Silently Burton used his tape-measure. The hole measured four and three-eighths inches across. It was eleven inches deep. The semicircular bottom was about a foot above the ground.

"This ridge," I said, "is about three feet higher than where we landed the ship. I bet the hole in the rock and the hole in this cactus are on the same level."

**G**ONZALES said slowly, "This was not done all at once. It is a result of periodic attacks. Look here and here. These overlapping depressions along the outer edges of the hole—" he pointed—"on this side of the

cactus. They are the signs of repeated impact. And the scallop effect on *this* side, where whatever made the hole emerged. There are juices still oozing—not at the point of impact, where the plant is desiccated, but below, where the shock was transmitted—”

A distant shout turned us around. Burton was at the rock, beside the ship. He was bending down, his eye to the far side of

the mysterious hole.

He looked for another second, then straightened and came toward us at a lopé.

“They line up,” he said when he reached us. “The bottom of the hole in the cactus is right in the middle when you sight through the hole in the rock.”

“As if somebody came around and whacked the cactus regularly,” Janus said, looking around warily.



"To keep the line of sight through the holes clear?" I wondered. "Why not just remove the cactus?"

"Religious," Janus explained.

The gauntlet he had discarded lay ignored on the ground, in the shadow of the cactus. We went on past the ridge toward an outcropping of rock about a hundred yards farther on. We walked silently, each of us wondering if what we half-expected would

really be there.

It was. In one of the tall, weathered spires in the outcropping, some ten feet below its peak and four feet above the ground, was a round four-inch hole.

Allenby sat down on a rock, nursing his ankle, and remarked that anybody who believed this crazy business was really happening must have holes in the rocks in his head.

Burton put his eye to the hole



and whistled. "Sixty feet long if it's an inch," he said. "The other end's just a pinpoint. But you can see it. The damn thing's perfectly straight."

I looked back the way we had come. The cactus stood on the ridge, with its U-shaped bite, and beyond was the ship, and beside it the perforated rock.

"If we surveyed," I said, "I bet the holes would all line up right to the last millimeter."

"But," Randolph complained, "why would anybody go out and bore holes in things all along a line through the desert?"

"Religious," Janus muttered. "It doesn't have to make sense."

WE stood there by the out-cropping and looked out along the wide, red desert beyond. It stretched flatly for miles from this point, south toward Mars' equator — dead sandy wastes, crisscrossed by the "canals," which we had observed while landing to be great straggly patches of vegetation, probably strung along underground water-flows.

**BLONG - G - G - G - . . . st - st - st - . . .**

We jumped half out of our skins. Ozone bit at our nostrils. Our hair stirred in the electrical uproar.

"L - look," Janus chattered, lowering his smoking gun.

About forty feet to our left, a small rabbity creature poked its head from behind a rock and stared at us in utter horror.

Janus raised his gun again.

"Don't bother," said Allenby tiredly. "I don't think it intends to attack."

"But—"

"I'm sure it isn't a Martian with religious convictions."

Janus wet his lips and looked a little shamefaced. "I guess I'm kind of taut."

"That's what I *taut*," said Allenby.

The creature darted from behind its rock and, looking at us over its shoulder, employed six legs to make small but very fast tracks.

We turned our attention again to the desert. Far out, black against Mars' azure horizon, was a line of low hills.

"Shall we go look?" asked Burton, eyes gleaming at the mystery.

Janus hefted his gun nervously. It was still crackling faintly from the discharge. "I say let's get back to the ship!"

Allenby sighed. "My leg hurts." He studied the hills. "Give me the field-glasses."

Randolph handed them over. Allenby put them to the shield of his mask and adjusted them.

After a moment he sighed again. "There's a hole. On a

plane surface that catches the Sun. A lousy damned round little impossible hole."

"Those hills," Burton observed, "must be thousands of feet thick."

THE argument lasted all the way back to the ship.

Janus, holding out for his belief that the whole thing was of religious origin, kept looking around for Martians as if he expected them to pour screaming from the hills.

Burton came up with the suggestion that perhaps the holes had been made by a disintegrator-ray.

"It's possible," Allenby admitted. "This might have been the scene of some great battle—"

"With only one such weapon?" I objected.

Allenby swore as he stumbled. "What do you mean?"

"I haven't seen any other lines of holes—only the one. In a battle, the whole joint should be cut up."

That was good for a few moments' silent thought. Then Allenby said, "It might have been brought out by one side as a last resort. Sort of an ace in the hole."

I resisted the temptation to mutiny. "But would even one such weapon, in battle, make only one line of holes? Wouldn't it be played in an arc against the

enemy? You know it would."

"Well—"

"Wouldn't it cut slices out of the landscape, instead of boring holes? And wouldn't it sway or vibrate enough to make the holes miles away from it something less than perfect circles?"

"It could have been very firmly mounted."

"Hugh, does that sound like a practical weapon to you?"

Two seconds of silence. "On the other hand," he said, "instead of a war, the whole thing might have been designed to frighten some primitive race—or even some kind of beast—the *hole* out of here. A demonstration—"

"Religious," Janus grumbled, still looking around.

We walked on, passing the cactus on the low ridge.

"Interesting," said Gonzales. "The evidence that whatever causes the phenomenon has happened again and again. I'm afraid that the war theory—"

"Oh, my God!" gasped Burton. We stared at him.

"The ship," he whispered. "It's right in line with the holes! If whatever made them is still in operation . . ."

"Run!" yelled Allenby, and we ran like fiends.

WE got the ship into the air, out of line with the holes to what we fervently hoped was

safety, and then we realized we were admitting our fear that the mysterious hole-maker might still be lurking around.

Well, the evidence was all for it, as Gonzales had reminded us—that cactus had been oozing.

We cruised at twenty thousand feet and thought it over.

Janus, whose only training was in photography, said, "Some kind of omnivorous animal? Or bird? Eats rocks and everything?"

"I will not totally discount the notion of such an animal," Randolph said. "But I will resist to the death the suggestion that it forages with geometric precision."

After a while, Allenby said, "Land, Burton. By that 'canal.' Lots of plant life—fauna, too. We'll do a little collecting."

Burton set us down feather-light at the very edge of the sprawling flat expanse of vegetation, commenting that the scene reminded him of his native Texas pear-flats.

We wandered in the chilly air, each of us except Burton pursuing his specialty. Randolph relentlessly stalked another of the rabbity creatures. Gonzales was carefully digging up plants and stowing them in jars. Janus was busy with his cameras, recording every aspect of Mars transferable to film. Allenby

walked around, helping anybody who needed it. An astronomer, he'd done half his work on the way to Mars and would do the other half on the return trip. Burton lounged in the Sun, his back against a ship's fin, and played chess with Allenby, who was calling out his moves in a bull roar. I grubbed for rocks.

My search took me farther and farther away from the others—all I could find around the 'canal' was gravel, and I wanted to chip at some big stuff. I walked toward a long rise a half-mile or so away, beyond which rose an enticing array of house-sized boulders.

As I moved out of earshot, I heard Randolph snarl, "Burton, will you stop yelling, 'Kt to B-2 and check?' Every time you open your yap, this critter takes off on me."

Then I saw the groove.

IT started right where the ground began to rise—a thin, shallow, curve-bottomed groove in the dirt at my feet, about half an inch across, running off straight toward higher ground.

With my eyes glued to it, I walked. The ground slowly rose. The groove deepened, widened—now it was about three inches across, about one and a half deep.

I walked on, holding my

breath. Four inches wide. Two inches deep.

The ground rose some more. Four and three-eighths inches wide. I didn't have to measure it—I knew.

Now, as the ground rose, the edges of the groove began to curve inward over the groove. They touched. No more groove.

The ground had risen, the grove had stayed level and gone underground.

Except that now it wasn't a groove. It was a round tunnel.

A hole.

A few paces farther on, I thumped the ground with my heel where the hole ought to be. The dirt crumbled, and there was the little dark tunnel, running straight in both directions.

I walked on, the ground falling away gradually again. The entire process was repeated in reverse. A hairline appeared in the dirt—widened—became lips that drew slowly apart to reveal the neat straight four-inch groove—which shrank as slowly to a shallow line of the ground—and vanished.

I looked ahead of me. There was one low ridge of ground between me and the enormous boulders. A neat four-inch semi-circle was bitten out of the very top of the ridge. In the house-sized boulder directly beyond was a four-inch hole.

**A** LLENBY winced and called the others when I came back and reported.

"The mystery deepens," he told them. He turned to me. "Lead on, Peters. You're temporary *drill* leader."

Thank God he didn't say *Fall in*.

The holes went straight through the nest of boulders—there'd be a hole in one and, ten or twenty feet farther on in the next boulder, another hole. And then another, and another—right through the nest in a line. About thirty holes in all.

Burton, standing by the boulder I'd first seen, flashed his flashlight into the hole. Randolph, clear on the other side of the jumbled nest, eye to hole, saw it.

**Straight as a string!**

The ground sloped away on the far side of the nest—no holes were visible in that direction—just miles of desert. So, after we'd stared at the holes for a while and they didn't go away, we headed back for the canal.

"Is there any possibility," asked Janus, as we walked, "that it could be a natural phenomenon?"

"There are no straight lines in nature," Randolph said, a little shortly. "That goes for a bunch of circles in a straight line. And for perfect circles, too."

"A planet is a circle," objected Janus.

"An oblate spheroid," Allenby corrected.

"A planet's orbit—"

"An ellipse."

Janus walked a few steps, frowning. Then he said, "I remember reading that there is something darned near a perfect circle in nature." He paused a moment. "Potholes." And he looked at me, as mineralogist, to corroborate.

"What kind of potholes?" I asked cautiously. "Do you mean where part of a limestone deposit has dissolved—"

"No. I once read that when a glacier passes over a hard rock that's lying on some softer rock, it grinds the hard rock down into the softer, and both of them sort of wear down to fit together, and it all ends up with a round hole in the soft rock."

"Probably neither stone," I told Janus, "would be homogeneous. The softer parts would abrade faster in the soft stone. The end result wouldn't be a perfect circle."

Janus's face fell.

"Now," I said, "would anyone care to define this term 'perfect circle' we're throwing around so blithely? Because such holes as Janus describes are often pretty damned round."

Randolph said, "Well . . ."

"It is settled, then," Gonzales said, a little sarcastically. "Your discussion, gentlemen, has established that the long, horizontal holes we have found were caused by glacial action."

"Oh, no," Janus argued seriously. "I once read that Mars never had any glaciers."

All of us shuddered.

HALF an hour later, we spotted more holes, about a mile down the 'canal,' still on a line, marching along the desert, through cacti, rocks, hills, even through one edge of the low vegetation of the 'canal' for thirty feet or so. It was the damnedest thing to bend down and look straight through all that curling, twisting growth . . . a round tunnel from either end.

We followed the holes for about a mile, to the rim of an enormous saucerlike valley that sank gradually before us until, miles away, it was thousands of feet deep. We stared out across it, wondering about the other side.

Allenby said determinedly, "We'll burrow to the bottom of these holes, once and for all. Back to the ship, men!"

We hiked back, climbed in and took off.

At an altitude of fifty feet, Burton lined the nose of the ship on the most recent line of holes and we flew out over the valley.

On the other side was a range of hefty hills. The holes went through them. Straight through. We would approach one hill—Burton would manipulate the front viewscreen until we spotted the hole—we would pass over the hill and spot the other end of the hole in the rear screen.

One hole was two hundred and eighty miles long.

Four hours later, we were half-way around Mars.

Randolph was sitting by a side port, chin on one hand, his eyes unbelieving. "All around the planet," he kept repeating. "All around the planet. . . ."

"Halfway at least," Allenby mused. "And we can assume that it continues in a straight line, through anything and everything that gets in its way. . . ." He gazed out the front port at the uneven blue-green haze of a 'canal' off to our left. "For the love of Heaven, why?"

Then Allenby fell down. We all did.

Burton had suddenly slapped at the control board, and the ship braked and sank like a plugged duck. At the last second, Burton propped up the nose with a short burst, the ten-foot wheels hit desert sand and in five hundred yards we had jounced to a stop.

Allenby got up from the floor. "Why did you do that?" he

asked Burton politely, nursing a bruised elbow.

Burton's nose was almost touching the front port. "Look!" he said, and pointed.

About two miles away, the Martian village looked like a handful of yellow marbles flung on the desert.

WE checked our guns. We put on our oxygen-masks. We checked our guns again. We got out of the ship and made damned sure the airlock was locked.

An hour later, we crawled inch by painstaking inch up a high sand dune and poked our heads over the top.

The Martians were runts—the tallest of them less than five feet tall—and skinny as a pencil. Dried-up and brown, they wore loincloths of woven fiber.

They stood among the dusty-looking inverted-bowl buildings of their village, and every one of them was looking straight up at us with unblinking brown eyes.

The six safeties of our six guns clicked off like a rattle of dice. The Martians stood there and gawped.

"Probably a highly developed sense of hearing in this thin atmosphere," Allenby murmured. "Heard us coming."

"They thought that landing of Burton's was an earthquake,"

Randolph grumbled sourly.

"Marsquake," corrected Janus. One look at the village's scrawny occupants seemed to have convinced him that his life was in no danger.

Holding the Martians covered, we examined the village from atop the thirty-foot dune.

The domelike buildings were constructed of something that looked like adobe. No windows—probably built with sandstorms in mind. The doors were about halfway up the sloping sides, and from each door a stone ramp wound down around the house to the ground—again with sandstorms in mind, no doubt, so drifting dunes wouldn't block the entrances.

The center of the village was a wide street, a long sandy area some thirty feet wide. On either side of it, the houses were scattered at random, as if each Martian had simply hunted for a comfortable place to sit and then built a house around it.

"Look," whispered Randolph.

One Martian had stepped from a group situated on the far side of the street from us. He started to cross the street, his round brown eyes on us, his small bare feet plodding sand, and we saw that in addition to a loincloth he wore jewelry—a hammered metal ring, a bracelet on one skinny ankle. The Sun caught

a copperish gleam on his bald narrow head, and we saw a band of metal there, just above where his eyebrows should have been.

"The super-chief," Allenby murmured. "Oh, shaman me!"

As the bejeweled Martian approached the center of the street, he glanced briefly at the ground at his feet. Then he raised his head, stepped with dignity across the exact center of the street and came on toward us, passing the dusty-looking buildings of his realm and the dusty-looking groups of his subjects.

He reached the slope of the dune we lay on, paused—and raised small hands over his head, palms toward us.

"I think," Allenby said, "that an anthropologist would give odds on that gesture meaning peace."

He stood up, holstered his gun—without buttoning the flap—and raised his own hands over his head. We all did.

**T**HE Martian language consisted of squeaks.

We made friendly noises, the chief squeaked and pretty soon we were the center of a group of wide-eyed Martians, none of whom made a sound. Evidently no one dared peep while the chief spoke—very likely the most articulate Martians simply squeaked themselves into the job. Al-

lenby, of course, said they just squeaked by.

He was going through the business of drawing concentric circles in the sand, pointing at the third orbit away from the Sun and thumping his chest. The crowd around us kept growing as more Martians emerged from the dome buildings to see what was going on. Down the winding ramps of the buildings on our side of the wide, sandy street they came—and from the buildings on the other side of the street, plodding through the sand, blinking brown eyes at us, not making a sound.

Allenby pointed at the third orbit and thumped his chest. The chief squeaked and thumped his own chest and pointed at the copperish band around his head. Then he pointed at Allenby.

"I seem to have conveyed to him," Allenby said dryly, "the fact that I'm chief of our party. Well, let's try again."

He started over on the orbits. He didn't seem to be getting anywhere, so the rest of us watched the Martians instead. A last handful was straggling across the wide street.

"Curious," said Gonzales. "Note what happens when they reach the center of the street."

Each Martian, upon reaching the center of the street, glanced at his feet—just for a moment—

without even breaking stride. And then came on.

"What can they be looking at?" Gonzales wondered.

"The chief did it too," Burton mused. "Remember when he first came toward us?"

We all stared intently at the middle of the street. We saw absolutely nothing but sand.

The Martians milled around us and watched Allenby and his orbits. A Martian child appeared from between two buildings across the street. On six-inch legs, it started across, got half-way, glanced downward—and came on.

"I don't get it," Burton said. "What in hell are they *looking* at?"

The child reached the crowd and squeaked a thin, high note.

A number of things happened at once.

SEVERAL members of the group around us glanced down, and along the edge of the crowd nearest the center of the street there was a mild stir as individuals drifted off to either side. Quite casually—nothing at all urgent about it. They just moved concertedly to get farther away from the center of the street, not taking their interested gaze off us for one second in the process.

Even the chief glanced up from

Allenby's concentric circles at the child's squeak. And Randolph, who had been fidgeting uncomfortably and paying very little attention to our conversation, decided that he must answer Nature's call. He moved off into the dunes surrounding the village. Or rather, he started to move.

The moment he set off across the wide street, the little Martian chief was in front of him, brown eyes wide, hands out before him as if to thrust Randolph back.

Again six safeties clicked. The Martians didn't even blink at the sudden appearance of our guns. Probably the only weapon they recognized was a club, or maybe a rock.

"What can the matter be?" Randolph said.

He took another step forward. The chief squeaked and stood his ground. Randolph had to stop or bump into him. Randolph stopped.

The chief squeaked, looking right into the bore of Randolph's gun.

"Hold still," Allenby told Randolph, "till we know what's up."

Allenby made an interrogative sound at the chief. The chief squeaked and pointed at the ground. We looked. He was pointing at his shadow.

Randolph stirred uncomfortably.

"Hold still," Allenby warned

him, and again he made the questioning sound.

The chief pointed up the street. Then he pointed down the street. He bent to touch his shadow, thumping it with thin fingers. Then he pointed at the wall of a house nearby.

We all looked.

Straight lines had been painted on the curved brick-colored wall, up and down and across, to form many small squares about four inches across. In each square was a bit of squiggly writing, in blackish paint, and a small wooden peg jutting out from the wall.

Burton said, "Looks like a damn crossword puzzle."

"Look," said Janus. "In the lower right corner—a metal ring hanging from one of the pegs."

AND that was all we saw on the wall. Hundreds of squares with figures in them—a small peg set in each—and a ring hanging on one of the pegs.

"You know what?" Allenby said slowly. "I think it's a calendar! Just a second—thirty squares wide by twenty-two high—that's six hundred and sixty. And that bottom line has twenty-six — twenty-seven squares. Six hundred and eighty-seven squares in all. That's how many days there are in the Martian year!"

He looked thoughtfully at the metal ring. "I'll bet that ring is hanging from the peg in the square that represents *today*. They must move it along every day, to keep track. . . ."

"What's a calendar got to do with my crossing the street?" Randolph asked in a pained tone.

He started to take another step. The chief squeaked as if it were a matter of desperate concern that he make us understand. Randolph stopped again and swore impatiently.

Allenby made his questioning sound again.

The chief pointed emphatically at his shadow, then at the communal calendar — and we could see now that he was pointing at the metal ring.

Burton said slowly, "I think he's trying to tell us that this is *today*. And such-and-such a time of day. I bet he's using his shadow as a sundial."

"Perhaps," Allenby granted.

Randolph said, "If this monkey doesn't let me go in another minute—"

The chief squeaked, eyes concerned.

"Stand still," Allenby ordered. "He's trying to warn you of some danger."

The chief pointed down the street again and, instead of squealing, revealed that there was another sound at his com-

mand. He said, "Whooooooosh!"

We all stared at the end of the street.

**N**OTHING! Just the wide avenue between the houses, and the high sand dune down at the end of it, from which we had first looked upon the village.

The chief described a large circle with one hand, sweeping the hand above his head, down to his knees, up again, as fast as he could. He pursed his monkey-lips and said, "Whooooooosh!" And made the circle again.

A Martian emerged from the door in the side of a house across the avenue and blinked at the Sun, as if he had just awakened. Then he saw what was going on below and blinked again, this time in interest. He made his way down around the winding lamp and started to cross the street.

About halfway, he paused, eyed the calendar on the house wall, glanced at his shadow. Then he got down on his hands and knees and crawled across the middle of the street. Once past the middle, he rose, walked the rest of the way to join one of the groups and calmly stared at us along with the rest of them.

"They're all crazy," Randolph said disgustedly. "I'm going to cross that street!"

"Shut up. So it's a certain time

of a certain day," Allenby mused. "And from the way the chief is acting, he's afraid for you to cross the street. And that other one just *crawled*. By God, do you know what this might tie in with?"

We were silent for a moment. Then Gonzales said, "Of course!"

And Burton said, "The holes!"

"Exactly," said Allenby. "Maybe whatever made—or makes—the holes comes right down the center of the street here. Maybe that's why they built the village this way—to make room for—"

"For what?" Randolph asked unhappily, shifting his feet.

"I don't know," Allenby said. He looked thoughtfully at the chief. "That circular motion he made—could he have been describing something that went around and around the planet? Something like—oh, no!" Allenby's eyes glazed. "I wouldn't believe it in a million years."

His gaze went to the far end of the street, to the high sand dune that rose there. The chief seemed to be waiting for something to happen.

"I'm going to crawl," Randolph stated. He got to his hands and knees and began to creep across the center of the avenue.

The chief let him go.

The sand dune at the end of the street suddenly erupted. A

forty-foot spout of dust shot straight out from the sloping side, as if a bullet had emerged. Powdered sand hazed the air, yellowed it almost the full length of the avenue. Grains of sand stung the skin and rattled minutely on the houses.

WhoooSSSHHHHH!

Randolph dropped flat on his belly. He didn't have to continue his trip. He had made other arrangements.

THAT night in the ship, while we all sat around, still shaking our heads every once in a while, Allenby talked with Earth. He sat there, wearing the headphones, trying to make himself understood above the godawful static.

"... an exceedingly small body," he repeated wearily to his unbelieving audience, "about four inches in diameter. It travels at a mean distance of four feet above the surface of the planet, at a velocity yet to be calculated. Its unique nature results in many hitherto unobserved—I might say even unimagined—phenomena." He stared blankly in front of him for a moment, then delivered the understatement of his life. "The discovery may necessitate a re-examination of many of our basic postulates in the physical sciences."

The headphones squawked.

Patiently, Allenby assured Earth that he was entirely serious, and reiterated the results of his observations. I suppose that he, an astronomer, was twice as flabbergasted as the rest of us. On the other hand, perhaps he was better equipped to adjust to the evidence.

"Evidently," he said, "when the body was formed, it traveled at such fantastic velocity as to enable it to—" his voice was almost a whisper—"to punch holes in things."

The headphones squawked.

"In rocks," Allenby said, "in mountains, in anything that got in its way. And now the holes form a large portion of its fixed orbit."

**Squawk.**

"Its mass must be on the order of—"

**Squawk.**

"—process of making the holes slowed it, so that now it travels just fast enough—"

**Squawk.**

"—maintain its orbit and pene-

trate occasional objects such as—"

**Squawk.**

"—and sand dunes—"

**Squawk.**

"My God, I know it's a mathematical monstrosity," Allenby snarled. "I didn't put it there!"

**Squawk.**

Allenby was silent for a moment. Then he said slowly, "A name?"

**Squawk.**

"H'm," said Allenby. "Well, well." He appeared to brighten just a little. "So it's up to me, as leader of the expedition, to name it?"

**Squawk.**

"Well, well," he said.

That chop-licking tone was in his voice. We'd heard it all too often before. We shuddered, waiting.

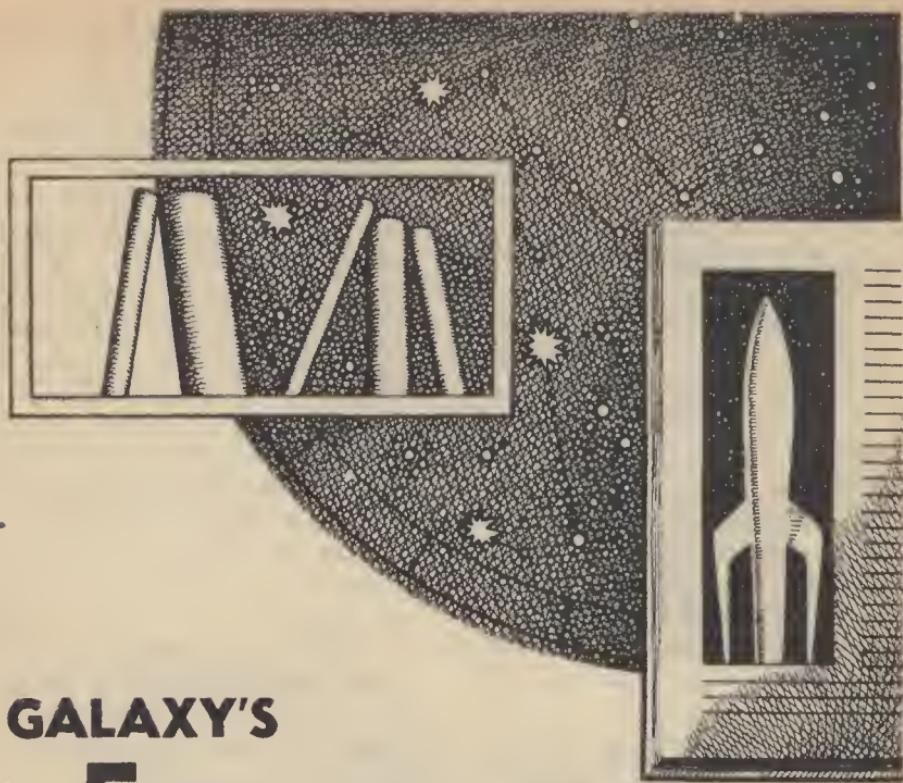
"Inasmuch as Mars' outermost moon is called Deimos, and the next Phobos," he said, "I think I shall name the third moon of Mars—Bottomos."

—JEROME BIXBY

The Big News Next Month . . .

**BEEP** by James Blish—something new and exciting in time stories!

**MEN LIKE MULES** by J. T. M'Intosh—a novel and suspenseful slant on the end of the world!



## GALAXY'S 5 Star Shelf

*CHILDHOOD'S END* by Arthur C. Clarke. Ballantine Books, Inc., New York, 1953. 214 pages, \$2.00 cloth, 35¢ paper

FOR a fascinating, uncomfortable—and unforgettable—experience, I recommend this strange book. Two months ago I reviewed Clarke's happy fairy tale, *Against the Fall of Night*, which peered into the misty fu-

ture to a rebirth of mankind after millenia of desuetude. Now I want to introduce you to his weirdly fatalistic picture of the imminent transmogrification of *Homo sapiens*, the children of the book's title. It is the far other end of the Clarkean gamut—from simple A to Z  $\times 10^{100}$ !

Just as the United States and Russia are about to launch their competing spaceships, the Over-

lords arrive from some unimaginable star system, making human efforts at interplanetary travel look like nine cents. The Overlords see to it that peace breaks out, standards of living for all improve dramatically, comfort and security and leisure arrive post-haste. But no one knows who the Overlords are or what they want here on Earth.

Decades later, one daring youth smuggles aboard an Overlord interstellar vessel, knowing it probably will be 80 years objective time, though only six months subjective, before he returns. However, he insists on going so he can find out what there is to know about the Earth's benevolent but autocratic Masters.

No sooner has he left than a completely unprecedented event takes place—an event for which the Overlords had been sent by their Overlords to prepare—and when he returns, the world of Men that he knew is utterly and forever gone. He becomes the Last Man on Earth.

But this capsule outline of the plot cannot even remotely suggest the richness, the variety, the maturity and the emotional darkness of this book. I am sure it will be compared with some of Stapledon's works—unfairly to both authors, since resemblances are only on the surface and

Clarke tells a much better story than Stapledon ever could.

But the sense of the Enormous—in space, in time, in thought—are similar in both writers. And while Clarke's pessimism is double-barreled in that it has a glorious side to it, it nevertheless is a pessimism that makes one think of *Last and First Men* more than once.

The book is a continuous excitement, a continuous kaleidoscope of the unexpected. That it is also sometimes a bit wearing because of the enormousness of its concepts and their essentially beyond-science nature is not surprising, nor is it a basic defect. It only makes you put the book down once in a while to gasp for breath. In all, it is a formidably impressive job.

**THE TIME MASTERS** by Wilson Tucker. Rinehart and Co., New York, 1953. 249 pages, \$2.50

**T**UCKER'S best science fiction to date has an idea as old as the genre itself, but a sufficiently fresh approach to give it high merit as a fast-moving science-adventure-detective story.

A "man with no past" turns up at Oak Ridge and drives its secret counterspy organization crazy with his seemingly pointless activities. There is a murder of a physicist, a fascinating Wo-

man of Mystery who was the physicist's wife, and a whole passel of other tasty ingredients.

Mixed in with all this is a sub-story of an "alien invasion," the result of a spaceship wreck many thousands of years ago, and a fantastic "explanation" of the ancient Gilgamesh Epic of a hero in search of immortality. As the tale progresses, these threads are cleverly woven together until at the end there is a completely logical, though highly surprising, unity.

First rate science fiction thriller, well-written and sharply paced—in a field where good mystery stories are rare.

**THE END OF THE WORLD**  
by Kenneth Heuer. Illustrated by Chesley Bonestell. Rinehart and Co., Inc., New York, 1953. 220 pages, \$3.00

IF any of our readers want to know how astrologists and philosophers in the past, and astronomers and physicists to-day, think the world will end, this little book is for them.

The author has collected a miscellany of purely superstitious, pseudo-religious ideas from the past concerning world's end, and has added a series of chapters on the "scientific" likelihood of terrestrial finis being accomplished by comet, Moon, asteroid

and star collisions, explosion or death of the Sun—and atomic war, only the last of which he deems possible within the foreseeable future. This end he believes is more than likely, through explosion of a series of hydrogen bombs with secondary radiation poisonings of the atmosphere.

Most of the book is time-passing extrapolation, but the chapter on atomic war is a powerful plea for peace as the only way of avoiding a Man-made "end of the world."

The Bonestell plates, first published in *Coronet* in July, 1947, are fine imaginative drawings that really need full color to be completely effective. But even in black and white they are worth having in your collection.

**O KING, LIVE FOREVER** by Henry Myers. Crown Publishers, Inc., New York, 1953. 214 pages, \$3.00

HERE is a queer one. It's not science fiction even though it is about the "science" of indefinitely prolonging lives. And yet it is science fiction, too, even though there's hardly a gadget in the whole book except railroads, which play a moderately macabre part in the plot.

It's the story of an Anglican parson, from the day around 1850 when at the age of three and a

half he heard a doctor pronounce him not long for this world and thereupon decided to fool everyone and live long, down through the odd period when Darwin and his followers were smashing the idols of Fundamentalism and the archeologists were uncovering the library of Ashur-banipall and translating the Epic of Gilgamesh (strange to hit that ancient item twice in one month—see the review of Tucker's book, above) with its legends of the long-lived Ancients, to the present, when the parson hero, thinly disguised as "The Old Gentleman," meets up with the story's narrator and the narrator finally meets up with the O.G.'s daughter and marries her. (Deep breath, please.) The Old Gent, incidentally, is well over a hundred, though he looks no more than a ruddy fifty-two.

That's all there is to it, except for some rather romantically melodramatic plotting about Victorian morals and the "ethics" of the Church of England in the 19th Century.

The fascinating thing about the book is that it makes you feel that its scientific speculations on prolonging life are real, immediate, and up to you—you, *individually*. You can will yourself to live longer if you go about it the right way!

I think you'll like this most unusual and well-done novel, de-

spite its being utterly unlike anything else in modern fantasy.

**AHEAD OF TIME** by Henry Kuttner. Ballantine Books, New York, 1953. 177 pages, \$2.00 cloth, 35¢ paper

**T**EEN top tales, by one who today is too little seen in the science fiction magazines, are here set before you in another of Ballantine's low-priced originals. Of the ten, three appeared during the past two years, six between 1942 and 1948, and one new one.

There is "Or Else," a gem about the man from space who tried to persuade a couple of Mexican feuders to declare peace—with hilarious results. There is a fine Hogben tale from 1948 (only Kuttner aficionados will know what a Hogben tale is; everyone else will have to read "Pile of Trouble" to find out) and a chiller named "Shock" that has to do with a person from the far future and a person from today and what happens when they mix it up in today's person's apartment.

Many readers may remember the superb "Camouflage," from eight years ago, about the human "transplant" that defeats an attempt to hijack an atomic pile being taken to Callisto, and everyone will want to read the new item, "Year Day," which de-

scribes as our future a Gehenna of advertising techniques that makes a minute of silence the most valuable program an advertiser can buy on the air.

Five other fine tales complete the roster. One of them, "Home Is the Hunter," appeared in this magazine.

**POCKET ENCYCLOPEDIA OF ATOMIC ENERGY** by Frank Gaynor. *Philosophical Library*, New York, n.d. 204 pages, \$7.50

THE publication in this country of Gaynor's encyclopedia, first issued in England in 1950, is an important service to scientists working in the fields of nuclear physics, chemistry and engineering, even though it is already somewhat out of date. It is not a book for the layman, but nevertheless it deserves mention because it is such a valuable contribution to the bibliography on atomic energy.

Though it is basically British in orientation, this is hardly a defect. American scientists have here a source for British definitions through which their own terminology can be coordinated with that of their co-workers overseas.

**FLIGHT INTO YESTERDAY** by Charles L. Harness. *Bouregy*

and *Curl, Inc.*, New York, 1953. 256 pages, \$2.75

CHARLES L. Harness' first long piece of science fiction is so far from being believable that one reads it purely as a sort of berserk fairy tale, portentous and at the same time dull. It is, however, pretty astonishing if only because of the cauldronful of ideas and fantasies that are mixed up in it.

The tale tells of Alar the Thief, another Man With No Past (see the Tucker book reviewed above). He is a member of the Society of Thieves in a dictator-ridden America of tomorrow; the Society devotes all its ill-gotten gains to freeing the "slaves" of this new decaying civilization.

A moderately good start—but before one has gone much further, one finds oneself mixed up with speeds so fast that spaceships return years before they have left; colonies on (or "in") the Sun, where madmen live for 20 days each, making "muirium," the fuel that makes such cosmic speeds possible; a sadist psychologist named Shey whose dealings with the heroine are more reminiscent of material to be found in pornography than in science fiction; and, finally, the End of Civilization—wham!

—GROFF CONKLIN

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**OFFER EXPIRES FEBRUARY 1, 1954**

# BACKLASH

By WINSTON MARKS

*They were the perfect servants — they were willing to do everything for nothing. The obvious question is: How much is nothing?*

Illustrated by SIBLEY

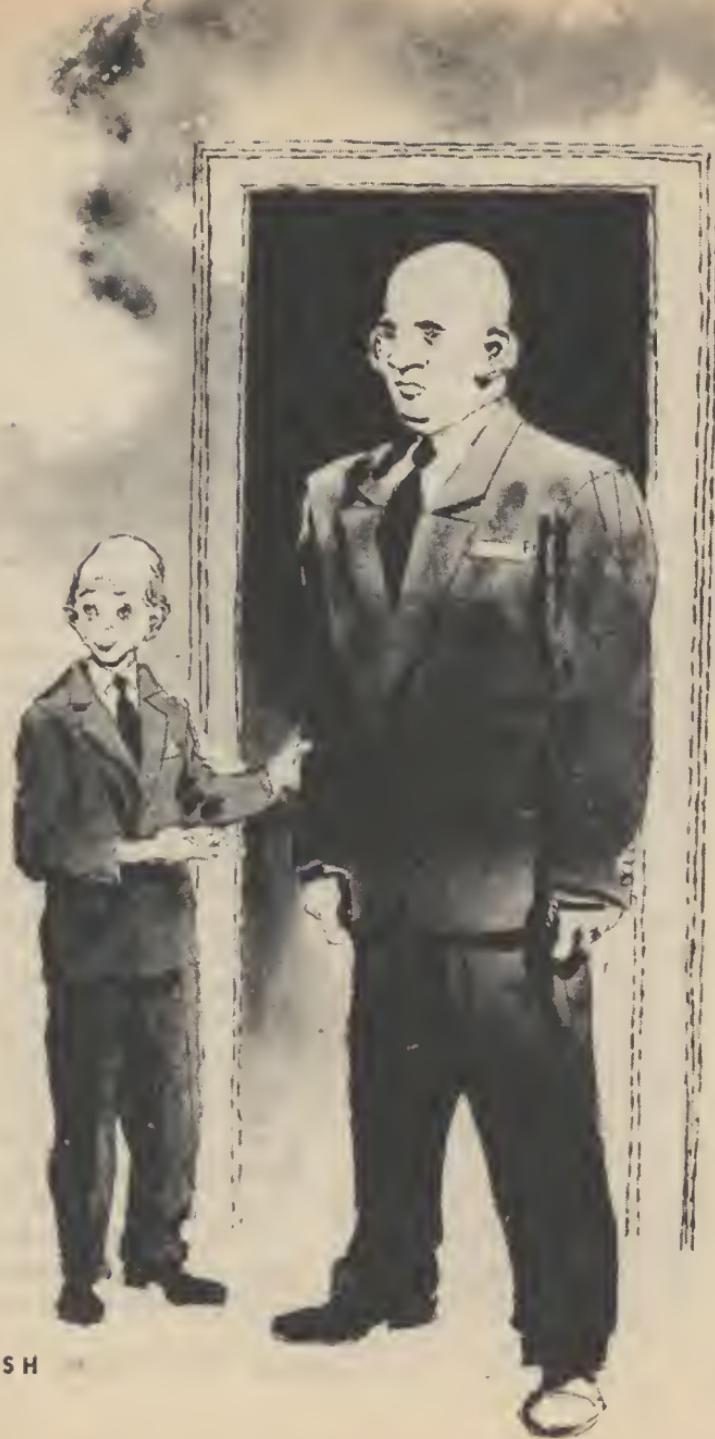


I STILL feel that the ingratiating little runts never intended any harm. They were eager to please, a cinch to transact business with, and constantly, everlasting grateful to us for giving them asylum.

Yes, we gave the genuflecting little devils asylum. And we were glad to have them around at first—especially when they presented our women with a gift to surpass all gifts: a custom-built domestic servant.

In a civilization that had made such a fetish of personal liberty and dignity, you couldn't hire a butler or an upstairs maid for less than love and money. And since love was pretty much rationed along the lines of monogamy, domestic service was almost a dead occupation. That is, until the Ollies came to our planet to stay.

Eventually I learned to despise



the spineless little immigrants from Sirius, but the first time I met one he made me feel foolishly important. I looked at his frail, olive-skinned little form, and thought, *If this is what space has to offer in the way of advanced life-forms . . . well, we haven't done so badly on old Mother Earth.*

This one's name was Johnson. All of them, the whole fifty-six, took the commonest Earth family names they could find, and dropped their own name-designations whose slobbering sibilance made them difficult for us to pronounce and write. It seemed strange, their casually wiping out their nominal heritage just for the sake of our convenience—imagine an O'Toole or a Rockefeller or an Adams arriving on Sirius IV and no sooner learning the local lingo than insisting on becoming known as Sslyslascifffosz!

But that was the Ollie. Anything to get along and please us. And of course, addressing them as Johnson, Smith, Jones, etc., did work something of a semantic protective coloration and reduce some of the barriers to quick adjustment to the aliens.

**J**OHNSON—*Ollie Johnson*—appeared at my third under-level office a few months after the big news of their shipwreck

landing off the Maine coast. He arrived a full fifteen minutes ahead of his appointment, and I was too curious to stand on the dignity of office routine and make him wait.

As he stood in the doorway of my office, my first visual impression was of an emaciated adolescent, seasick green, prematurely balding.

He bowed, and bowed again, and spent thirty seconds reminding me that it was *he* who had sought the interview, and it was *he* who had the big favors to ask—and it was wonderful, gracious, generous *I* who flavored the room with the essence of mystery, importance, godliness and overpowering sweetness upon whose fragrance little Ollie Johnson had come to feast his undeserving senses.

"Sit down, sit down," I told him when I had soaked in all the celestial flattery I could hold. "I love you to pieces, too, but I'm curious about this proposition you mentioned in your message."

He eased into the chair as if it were much too good for him. He was strictly humanoid. His four-and-a-half-foot body was dressed in the most conservative Earth clothing, quiet colors and cheap quality.

While he swallowed slowly a dozen times, getting ready to outrage my illustrious being with

his sordid business proposition, his coloring varied from a rather insipid gray-green to a rich olive—which is why the press instantly had dubbed them *Ollies*. When they got excited and blushed, they came close to the color of a ripe olive; and this was often.

OLLIE JOHNSON hissed a few times, his equivalent of throat-clearing, and then lunged into his subject at a 90 degree tangent:

"Can it be that your gracious agreement to this interview connotes a willingness to traffic with us of the inferior ones?" His voice was light, almost reedy.

"If it's legal and there's a buck in it, can't see any reason why not," I told him.

"You manufacture and distribute devices, I am told. Wonderful labor-saving mechanisms that make life on Earth a constant pleasure."

I was almost tempted to hire him for my public relations staff.

"We do," I admitted. "Servomechanisms, appliances and gadgets of many kinds for the home, office and industry."

"It is to our everlasting disgrace," he said with humility, "that we were unable to salvage the means to give your magnificent civilization the worthy gift of our space drive. Had Flussissc or Shascinssith survived our long

journey, it would be possible, but—" He bowed his head, as if waiting for my wrath at the stale news that the only two power-mechanic scientists on board were D.O.A.

"That was tough," I said. "But what's on your mind now?"

He raised his moist eyes, grateful at my forgiveness. "We who survived do possess a skill that might help repay the debt which we have incurred in intruding upon your glorious planet."

He begged my permission to show me something in the outer waiting room. With more than casual interest, I assented.

He moved obsequiously to the door, opened it and spoke to someone beyond my range of vision. His words sounded like a repetition of "sissle-flissle." Then he stepped aside, fastened his little wet eyes on me expectantly, and waited.

Suddenly the doorway was filled, jamb to jamb, floor to arch, with a hulking, bald-headed character with rugged pink features, a broad nose like a pug, and huge sugar-scoops for ears. He wore a quiet business suit of fine quality, obviously tailored to his six-and-a-half-foot, clifflike physique. In spite of his bulk, he moved across the carpet to my desk on cat feet, and came to a halt with pneumatic smoothness.

"I am a Soth," he said in a

low, creamy voice. It was so resonant that it seemed to come from the walls around us. "I have learned your language and your ways. I can follow instructions, solve simple problems and do your work. I am very strong. I can serve you well."

**T**HE recitation was an expressionless monotone that sounded almost haughty compared to the self-effacing Ollie's piping whines. His face had the dignity of a rock, and his eyes the quiet peace of a cool, deep mountain lake.

The Ollie came forward. "We have been able to repair only one of the six Soths we had on the ship. They are more fragile than we humanoids."

"They don't look it," I said. "And what do you mean by *you* humanoids? What's he?"

"You would call him—a robot, I believe."

My astonished reaction must have satisfied the Ollie, because he allowed his eyes to leave me and seek the carpet again, where they evidently were more comfortable.

"You mean *you*—*you* *make* these people?" I gasped.

He nodded. "We can reproduce them, given materials and facilities. Of course, your own robots must be vastly superior—" a hypocritical sop to my van-

ity—"but still we hope you may find a use for the Soths."

I got up and walked around the big lunker, trying to look blasé. "Well, yes," I lied. "Our robots probably have considerably better intellectual abilities—our cybernetic units, that is. However, you do have something in form and mobility."

That was the understatement of my career.

I finally pulled my face together, and said as casually as I could, "Would you like to license us to manufacture these—Soths?"

The Ollie fluttered his hands. "But that would require our working and mingling with your personnel," he said. "We wouldn't consider imposing in such a gross manner."

"No imposition at all," I assured him.

But he would have none of it: "We have studied your economics and have found that your firm is an outstanding leader in what you term 'business.' You have a superb distribution organization. It is our intention to offer you the exclusive—" he hesitated, then dragged the word from his amazing vocabulary — "franchise for the sale of our Soths. If you agree, we will not burden you with their manufacture. Our own little plant will produce and ship. You may then place them with your customers."

I studied the magnificent piece of animated sculpturing, stunned at the possibilities. "You say a Soth is strong. How strong?"

The huge creature startled me by answering the question himself. He bent flowingly from the waist, gripped my massive steel desk by one of its thick, overlapping top edges, and raised it a few inches from the floor—with the fingers of one hand. When he put it down, I stood up and hefted one edge myself. By throwing my back into it, I could just budge one side of the clumsy thing—four hundred pounds if it was an ounce!

**O**LLIE JOHNSON modestly refrained from comment. He said, "The Department of Commerce has been helpful. They have explained your medium of exchange, and have helped us with the prices of raw materials. It was they who recommended your firm as a likely distributor."

"Have you figured how much one of these Soths should sell for?"

"We think we can show a modest profit if we sell them to you for \$1200," he said. "Perhaps we can bring down our costs, if you find a wide enough demand for them."

I had expected ten or twenty times that figure. I'm afraid I got a little eager. "I—uh—shall we

see if we can't just work out a little contract right now? Save you another trip back this afternoon."

"If you will forgive our boorish presumption," Ollie said, fumbling self-consciously in his baggy clothing, "I have already prepared such a document with the help of the Attorney General. A very kindly gentleman."

It was simple and concise. It allowed us to resell the Soths at a price of \$2000, Fair Traded, giving us a gross margin of \$800 to work with. He assured me that upkeep and repairs on the robot units were negligible, and we could extend a very generous warranty which the Ollies would make good in the event of failure. He gave me a quick rundown on the care and feeding of a Sirian Soth, and then jolted me with:

"There is just a single other favor I beg of you. Would you do my little colony the exquisite honor of accepting this Soth as your personal servant, Mr. Collins?"

"Servant?"

**H**E bobbed his head. "Yes, sir. We have trained him in the rudiments of the household duties and conventions of your culture. He learns rapidly and never forgets an instruction. Your wife would find Soth most use-

ful, I am quite certain."

"A magnificent specimen like this doing housework?" I marveled at the little creature's empty-headedness.

"Again I must beg your pardon, sir. I overlooked mentioning a suggestion by the Secretary of Labor that the Soths be sold only for use in domestic service. It was also the consensus of the President's whole cabinet that the economy of any nation could not cope with the problem of unemployment were our Soths to be made available for all the types of work for which they are fitted."

My dream of empire collapsed. The little green fellow was undoubtedly telling the truth. The unions would strike any plant or facility in the world where a Soth put foot on the job. It would ruin our retail consumer business, too—Sooths wouldn't consume automobiles, copters, theater tickets and filets, mignon.

"Yes, Mr. Johnson," I sighed. "I'll be happy to try out your Soth. We have a place out in the country where he'll come in handy."

The Ollie duly expressed his ecstasy at my decision, and backed out of my office waving his copy of the contract. I had assured him that our board of directors would meet within a week and confirm my signature.

I looked up at the hairless giant. As general director of the Home Appliance Division of Worldwide Machines, Incorporated, I had made a deal, all right. The first interplanetary business deal in history.

But for some reason, I couldn't escape the feeling that I'd been had.

ON the limoucopter, they charged me double fare for Soth's transportation to the private field where I kept my boat. As we left Detroit, I watched him stare down at the flattened skyline, but he did it with the unseeing expression of an old commuter.

Jack, my personal pilot, had eyed my passenger at the airport with some concern and sullen muttering. Now he made much of trimming ship after takeoff. The boat did seem logy with the unaccustomed ballast—it was a four-passenger Arrow, built for speed, and Soth had to crouch and spread all over the two rear seats. But he did so without complaint or comment for the half-hour hop up to our estate on my favorite Canadian lake.

As the four hundred miles unreeled below us, I wondered how Vicki would react to Soth. I should have phoned her, but how do you describe a Soth to a semi-invalid whose principal ex-

ciment is restricted to bird-watching and repotting puny geraniums, and a rare sunfishing expedition to the end of our floating pier?

Well, it was Friday, and I would have the whole weekend to work the robot into our routine. I had called my friend, Dr. Frederick Hilliard, a retired industrial psychologist, and invited him to drop over tonight if he wanted an interesting surprise. He was our nearest neighbor and my most frequent chess partner, who lived a secluded bachelor's life in a comfortable cabin on the far shore of our lake.

As we came in for a water landing, I saw Fred's boat at our pier. Then I could make out Fred, Vicki and Clumsy, our Irish setter, all waiting for me. I hoped Fred's presence would help simmer Vicki down a little.

We drifted in to the dock, and I turned to Soth and told him to help my pilot unload the supplies. This pleased Jack, whose Pilot and Chauffeur's Local frequently reminded me in polite little bulletins that its members were not obligated to perform other than technical services for their employers.

Then I got out and said hello to Vicki and Fred as casually as possible. Vicki kissed me warmly on the mouth, which she does when she's excited; and then clung

to me and let the day's tension soak out of her.

How you get tense in a Twenty-first Century home in the midst of the Canadian wilderness is something I've never been able to figure out, but Vicki's super-imagination managed daily to defeat her doctor's orders for peace and quiet.

"I'm glad you're home, dear," she said. "When Fred came over ahead of time I knew something was up, and I'm all unraveled with curiosity."

Just then Soth emerged from the boat with our whole week's supply of foodstuffs and assorted necessities bundled under his long arms.

"Oh, dear God, a dinner guest!" Vicki exclaimed. Tears started into her reproachful eyes and her slender little figure stiffened in my arms.

I SWUNG her around, hooked arms with her and Fred, and started up the path.

"Not a guest," I told her. "He's a servant who will make the beds, clean up and all sorts of things, and if you don't like him we'll turn him in on a new model laundry unit, and don't start worrying about being alone with him—he's a robot."

"A robot!" Fred said, and both their heads swiveled to stare back.

"Yes," I said. "That's why I wanted you here tonight, Fred. I'd like to have you sort of go over him and—well, you know—"

I didn't want to say, *make sure he's safe*. Not in Vicki's presence. But Fred caught my eye and nodded.

I started to tell them of my visitor, and the contract with the castaways from space. Halfway through, Clumsy interrupted me with his excited barking. I looked back. Clumsy was galloping a frantic circle around Soth, cutting in and out, threatening to make an early dinner of the intruder's leg.

Before I could speak, Soth opened his lips and let out a soft hiss through his white teeth. Clumsy flattened to the ground and froze, and Soth continued after us without a further glance at the dog.

Fred looked at Vicki's tense face and laughed. "I'll have to learn that trick . . . Clumsy's chewed the cuffs off three pairs of my best slacks."

Vicki smiled uncertainly, and went into the house. I showed Soth where to stow the supplies, and told him to remain in the kitchen. He just froze where he stood.

Fred was making drinks when I returned to the living room.

"Looks docile enough, Cliff," he told me.

"Strong as a horse and gentle as a lamb," I said. "I want you two to help me find out what his talents are. I'll have to prepare a paper on him for the board of directors Monday."

There were nervous whitecaps on Vicki's drink.

I patted her shoulder. "I'll break him into the housekeeping routine, honey. You won't have him staring over your shoulder."

She tried to relax. "But he's so quiet—and big!"

"Who wants a noisy little servant around?" Fred said helpfully. "And how about that rock retaining-wall Cliff is always about to build for your garden? And you really don't love housework, do you, Vicki?"

"I don't mind the chores," she said. "But it might be fun to have a big fellow like that to shove around." She was trying valiantly to hold up her end, but the vein in her temple was throbbing.

**W**ELL, the next forty-eight hours were more than interesting. Soth turned out to be what the doctor ordered, literally and figuratively. After I'd taken him on a tour of the place, I showed him how to work the automatic devices—food preparation, laundry and cleaning. And after one lesson, he served us faultless meals with a quiet efficiency that was actually rest-

ful, even miraculously to Vicki.

She began relaxing in his presence and planning a few outside projects "to get our money's worth" out of the behemoth. This was our earliest joke about Soth, because he certainly was no expense or problem to maintain. As the Ollie had promised, he thrived on our table scraps and a pink concoction which he mixed by pouring a few drops of purple liquid from a pocket vial into a gallon pitcher of water. The stuff would be supplied by the Ollies at a cost of about a dollar eighty a week.

Saturday afternoon, Vicki bravely took over teaching him the amenities of butlering and the intricacies of bed-making. After a short session in the bedroom, she came out looking thoughtful.

"He's awfully real looking," she said. "And you can't read a darned thing in his eyes. How far can you trust him, Cliff? You know—around women?"

Fred looked at me with a raised eyebrow and said, "Well, let's find out."

We sat down and called Soth into the living room. He came and stood before us, erect, poised and motionless.

Fred said, "Disrobe. Remove all your clothing. Strip!"

Vicki sucked in her breath.

The Soth replied instantly, "Your order conflicts with my

conditioning. I must not remove my covering in the presence of an Earthwoman."

Fred scratched his gray temple thoughtfully. "Then, Vicki, would you mind disrobing, please?"

She gulped again. Fred was an old friend, but not exactly the family doctor.

He sensed her mild outrage. "You'll never stop wondering if you don't," he said.

She looked at Fred, me, and then Soth. Then she stood up gingerly, as if edging into a cold shower, gritted her teeth, grasped the catch to her full-length zipper of her blue lounging suit and stripped it from armpit to ankle. As she stepped out of it, I saw why she had peeled it off like you would a piece of adhesive tape: It was a warm day, and she wore no undergarments.

**S**OTH moved so softly I didn't hear him go, but Fred was watching him—Fred's eyes were where they belonged. Soth stopped in the archway to the dining room with his back turned. Fred was at his side.

"Why did you leave?" Fred demanded.

"I am not permitted to remain in the company of an uncovered Earthwoman . . . unless she directs me to do so."

While Vicki fled behind the

French door to dress herself, Fred asked, "Are there any other restrictions to your behavior in the presence of Earthwomen?"

"Many."

"Recount some of them."

"An Earthwoman may not be touched, regardless of her wishes, unless danger to her life requires it."

"Looks like you wash your own back, Vicki," I chuckled.

"What else?" she asked, poking her head out. "I mean what other things can't you do?"

"There are many words I may not utter, postures I may not assume, and certain duties I may not perform. Certain answers to questions may not be given in the presence of an Earthwoman."

Fred whistled. "The Ollies have mastered more than our language . . . I thought you said they were



noted mainly for their linguistic talents, Cliff."

I was surprised, too. In the space of a few hectic months our alien visitors had probed deeply into our culture, mores and taboos—and then had had the genius to instill their compounded dispositions into their Soths.

I said, "Satisfied, Vicki?"

She was still arranging herself. Her lips curled up at the corners impishly. "I'm almost disappointed," she said. "I do an all-out striptease, and no one looks but my husband. Of course," she added thoughtfully, "I suppose that's something . . ."

FRED stayed with us until Sunday evening. I went down to the pier to smoke a good-night pipe with him, and get his private opinion.

"I'm buying a hundred shares of Worldwide stock tomorrow," he declared. "That critter is worth his weight in diamonds to every well-heeled housewife in the country. In fact, put me down for one of your first models. I wouldn't mind having a laundry sorter and morning coffee-pourer, myself."

"Think he's safe, do you?"

"No more emotions than that stump over there. And it baffles me. He has self-awareness, pain-sensitivity and a fantastic vocabulary, yet I needled him all afternoon with every semantic hypo I could think of without getting a flicker of emotion out of him." He paused. "Incidentally, I made him strip for me in my room. You'll be as confused as I was to learn that he's every inch a man in his format."

"What?" I exclaimed.

"Made me wonder what his duties included back on his home planet . . . but as I said, no emotions. With the set of built-in inhibitions he has, he'd beat a eunuch out of his job any day of the week."

A few seconds later, Fred dropped into his little two-seater and skimmed off for home, leaving me with a rather disturbing question in my mind.

I went back to the house and cornered Soth out in the kitchen alone. Vicki had him polishing



all the antique silverware.

"Are there female Soths?" I asked point-blank.

He looked down at me with that relaxed, pink look and said, "No, Mr. Collins," and went back to his polishing.

The damned liar. He knew what I meant. He justified himself on a technicality.

I LEFT Vicki Monday morning with more confidence than I'd had in ages. She had slept especially well, and the only thing on her mind was Clumsy's disappearance. He hadn't shown up since Soth scared the fleas off him with that hiss.

At the office, I had my girl transcribe my notes and work up a memorandum to the board of directors. We sent it around before noon, and shortly after lunch I had calls from all ten of them, including the chairman. It was not that they considered it such a big thing—they were just plainly curious. We scheduled a meeting for Tuesday morning, to talk the thing over.

That night when I got home, all was serene. Soth served us cocktails, dinner and a late snack, and had the place tidied up by bedtime. He did all this and managed to remain virtually invisible. He moved so quietly and with such uncanny anticipation of our demands, it was as if he were an old

family retainer, long versed in our habits and customs.

Vicki bragged as she undressed that she had the giant hog-tied and jumping through hoops.

"We even got half the excavation done for the rock wall," she said proudly.

On impulse, I went out into the hall and down to Soth's room, where I found him stretched out slaunchwise across the double bed.

He opened his eyes as I came in, but didn't stir.

"Are you happy here?" I asked bluntly.

He sat up and did something new. He answered my question with a question. "Are you happy with my services?"

I said, "Yes, of course."

"Then all is well," he replied simply, and lay down again.

It seemed like a satisfactory answer. He radiated a feeling of peace, and the expression of repose on his heavy features was assuring.

IT rained hard and cold during the night. I hadn't shown Soth how to start the automatic heating unit. When I left the house next morning, he was bringing Vicki her breakfast in bed, a tray on one arm and a handful of kindling under the other. Only once had he watched me build a fire in the fireplace, but he

proceeded with confidence.

We flew blind through filthy weather all the way to Detroit. I dismissed Jack with orders to return at eleven with Soth.

"Don't be late," I warned him.

Jack looked a little uneasy, but he showed up on schedule and delivered Soth to us with rain droplets on his massive bald pate, just ten minutes after the conference convened.

I had Ollie Johnson there, too, to put Soth through his paces. The Ollie, in a bedraggled, soggy suit, was so excited that he remained an almost purplish black for the whole hour.

The directors were charmed, impressed and enthusiastic.

When I finished my personal report on the Soth's tremendous success in my own household, old Gulbrandson, Chairman of the Board, shined his rosy cheeks with his handkerchief and said, "I'll take the first three you produce, Johnson. Our staff of domestics costs me more than a brace of attorneys, and it turns over about three times a year. Cook can't even set the timer on the egg-cooker right." He turned to me. "Sure he can make good coffee, Collins?"

I nodded emphatically.

"Then put me down for three for sure," he said with executive finality.

Gulbrandson paid dearly for

his piggishness later, but at the time it seemed only natural that if one Soth could run a household efficiently, then the Chairman of the Board should have at least two spares in case one blew a fuse or a vesicle or whatever it was they might blow.

**A** SMALL, dignified riot almost broke up the meeting right there, and when they quieted down again I had orders for twenty-six Soths from the board members and one from my own secretary.

"How soon," I asked Ollie Johnson, "can you begin deliveries?"

He dry-washed his hands and admitted it would be five months, and a sigh of disappointment ran around the table. Then someone asked him how many units a month they could turn out.

He stared at the carpet and held out his hands like a pawn-broker disparaging a diamond ring: "Our techniques are so slow. The first month, maybe a hundred. Of course, once our cultures are all producing in harmony, almost any number. One thousand? Ten thousand? Whatever your needs suggest."

One of the officers asked, "Is your process entirely biological? You mentioned cultures."

For a moment, I thought Ollie Johnson was going to break out

in tears. His face twisted.

"Abysmally so," he grieved. "Our synthetic models have never proved durable. Upkeep and parts replacements are prohibitive. Our brain units are much similar to your own latest developments in positronics, but we have had to resort to organic cellular structure in order to achieve the mobility which Mr. Collins admired last Friday."

The upshot of the meeting was a hearty endorsement over my signature on the Ollies' contract, plus an offer of any help they might need to get production rolling.

As the meeting broke up, they pumped my hand and stared enviously at my Soth. Several offered me large sums for him, up to fifteen thousand dollars, and for the moment I sweated out the rack of owning something my bosses did not. Their understandable resentment, however, was tempered by their recognition of my genius in getting a signed contract before the Ollies went shopping to our competitors.

What none of us understood right then was that the Ollies were hiring us, not the other way around.

When I told Vicki about my hour of triumph and how the officers bid up our Soth, she glowed with the very feminine delight of exclusive possession.

She hugged me and gloated, "Old biddy Gulbrandson — won't she writhe? And don't you dare take any offer for our Soth. He's one of the family now, eh, Soth, old boy?"

He was serving soup to her as she slapped him on the hip. Somehow he managed to retreat so fast she almost missed him, yet he didn't spill a drop of bouillon from the poised tureen.

"Yes, Mrs. Collins," he said, not a trace more nor less aloof than usual.

"Oops, sorry!" Vicki apologized. "I forgot. The code."

I had the feeling that warm-hearted Vicki would have had the Soth down on the bearskin rug in front of the big fireplace, scuffling him like she did Clumsy, if it hadn't been for the Soth's untouchable code—and I was thankful that it existed. Vicki had a way of putting her hand on you when she spoke, or hugging anyone in sight when she was especially delighted.

And I knew something about Soth that she didn't. Something that apparently hadn't bothered her mind since the day of her striptease.

**S**UMMER was gone and it was mid-fall before Ollie paid me another visit. When he showed up again, it was with an invoice for 86 Soths, listed by serial numbers

and ready to ship. He had heard about sight drafts and wanted me to help him prepare one.

"To hell with that noise," I told him. I wrote a note to purchasing and countersigned the Ollie's invoice for some \$103,000. I called my secretary and told her to take Ollie and his bill down to disbursing and have him paid off.

I had to duck behind my desk before the Ollie dreamed up some new obscenity of gratitude to heap on me. Then I cleared shipping instructions through sales for the Soths already on order and dictated a memo to our promotion department. I cautioned them to go slowly at first—the Soths would be on tight allotment for a while.

One snarl developed. The Department of Internal Revenue landed on us with the question: Were the Soths manufactured or grown? We beat them out of a manufacturer's excise tax, but it cost us plenty in legal fees.

The heads of three labor unions called on me the same afternoon of the tax hearing. They got their assurances in the form of a clause in the individual purchase contracts, to the effect that the "consumer" agreed not to employ a Soth for the purpose of evading labor costs in the arts, trades and professions as organized under the various unions, and at all

times to be prepared to withdraw said Soth from any unlisted job in which the unions might choose to place a member human worker.

Before they left, all three union men placed orders for household Soths.

"Hell," said one, "that's less than the cost of a new car. Now maybe my wife will get off my back on this damfool business of organizing a maid's and butler's union. Takes members to run a union, and the only real butler in our neighborhood makes more than I do."

**T**HAT'S the way it went. The only reason we spent a nickel on advertising was to brag up the name of W. W. M. and wave our coup in the faces of our competitors. By Christmas, production was up to two thousand units a month, and we were already six thousand orders behind.

The following June, the Ollies moved into a good hunk of the old abandoned Willow Run plant and got their production up to ten thousand a month. Only then could we begin to think of sending out floor samples of Soths to our distributors.

It was fall before the distributors could place samples with the most exclusive of their retail accounts. The interim was spent simply relaying frantic priority orders from high-ranking people

all over the globe directly to the plant, where the Ollies filled them right out of the vats.

Twenty thousand a month was their limit, it turned out. Even when they had human crews completely trained in all production phases, the fifty-six Ollies could handle only that many units in their secret conditioning and training laboratories.

For over two more years, business went on swimmingly. I got a fancy bonus and a nice vacation in Paris, where I was the rage of the continent. I was plagued with requests for speaking engagements, which invariably turned out to be before select parties of V. I. P.s whose purpose was to twist my arm for an early priority on a Soth delivery.

When I returned home, it was just in time to have the first stink land in my lap.

An old maid claimed her Soth had raped her.

Before our investigators could reveal our doctors' findings that she was a neurotic, dried up old virgin and lying in her teeth, a real crime occurred.

A New Jersey Soth tossed a psychology instructor and his three students out of a third floor window of their university science building, and all four ended an attempted morbid investigation on the broad, unyielding cement of the concourse.

My phone shrieked while they were still scraping the inquiring minds off the pavement. The Soth was holed up in the lab, and would I come right away?

I PICKED up Ollie Johnson, who was now sort of a public relations man for his tribe, and we arrived within an hour.

The hallway was full of uniforms and weapons, but quite empty of volunteers to go in and capture the "berserk" robot.

Ollie and I went in right away, and found him standing at the open window, staring down at the people with hoses washing off the stains for which he was responsible.

Ollie just stood there, clenching and unclenching his hands and shaking hysterically. I had to do the questioning.

I said sternly, "Soth, why did you harm those people?"

He turned to me as calmly as my own servant. His neat denim jacket, now standard fatigue uniform for Soths, was unfastened. His muscular chest was bare.

"They were tormenting me with that." He pointed to a small electric generator from which ran thin cables ending in sharp test prods. "I told Professor Kahnovsky it was not allowed, but he stated I was his property. The three boys tried to hold me with those straps while the professor

touched me with the prods.

"My conditioning forbade me from harming them, but there was a clear violation of the terms of the covenant. I was in the proscribed condition of immobility when the generator was started. When the pain grew unbearable, the prime command of my conditioning was invoked. I must survive. I threw them all out the window."

The Soth went with us peacefully enough, and submitted to the lockup without demur. For a few days, before the state thought up a suitable indictment, the papers held a stunned silence. Virtually every editor and publisher had a Soth in his own home.

Then the D.A., who also owned a Soth, decided to drop the potentially sensational first degree murder charges that might be indicated, and came out instead with a second degree indictment.

**T**HAT cracked it. The press split down the middle on whether the charge should be changed to third degree murder or thrown out of court entirely as justifiable homicide by a non-responsible creature.

This was all very sympathetic to the Soth's cause, but it had a fatal effect. In bringing out the details of the crime, it stirred a certain lower element of our society to add fear and hate to a

simmering envy of the wealthier Soth-owners.

Mobs formed in the streets, marching and demonstrating. The phony rape story was given full credence, and soon they were amplifying it to a lurid and rabble-rousing saga of bestiality.

Soth households kept their prized servants safely inside. But on the afternoon of the case's dismissal, when the freed Soth started down the courthouse steps, someone caved his head in with a brick.

Ollie Johnson and I were on either side of him, and his purple blood splashed all over my light topcoat. When the mob saw it, they closed in on us screaming for more.

An officer helped us drag the stricken Soth back into the courthouse, and while the riot squad disbursed the mob, we slipped him out the back way in an ambulance, which returned him to the Willow Run plant for repairs.

It hit the evening newscasts and editions:

#### **ACQUITTED SOTH MURDERED ON COURTHOUSE STEPS!**

**I** WAS halfway home when the airwaves started buzzing. The mobs were going wild. Further developments were described as Jack and I landed on the wind-

blown lake. The State Guard was protecting the Ollies' Willow Run Plant against a large mob that was trying to storm it, and reinforcements had been asked by the state police.

Vicki met me on the pier. Her face was white and terribly troubled. I guess mine was, too, because she burst into tears in my arms. "The poor Soth," she sobbed. "Now what will they do?"

"God knows," I said. I told Jack to tie up the boat and stay overnight—I feared I might be called back any minute. He mumbled something about overtime, but I think his main concern was in staying so near to a Soth during the trouble that was brewing.

We went up to the house, leaving him to bed himself down in the temporary quarters in the boathouse that the union required I maintain for him.

Soth was standing motionless before the video, staring at a streaky picture of the riot scene at Willow Run. His face was inscrutable as usual, but I thought I sensed a tension. His black serving-jacket was wrinkled at the shoulders as he flexed the muscles of his powerful arms.

Yet when Vicki asked for some martinis, he mixed and served them without comment. We drank and then ate dinner in silence. We were both reluctant to

discuss this thing in front of Soth.

We were still eating when an aircab thundered overhead. A minute later, I watched it land a tiny passenger at our pier and tie up to wait for him.

It was Ollie Johnson, stumbling hatless up the flagstone path.

I held the door for him, but he burst by me with hardly a glance.

"Where is he?" he demanded, and stormed out into the kitchen without awaiting a reply.

I followed in time to see him fall on his face before our Soth and shed genuine tears. He lay there sobbing and hissing for over a minute, and an incredible idea began forming in my mind. I sent Vicki to her bedroom and stepped into the kitchen.

I said, "Will you please explain this?"

He didn't move or acknowledge.

Soth flipped him aside with a twist of his ankle and brushed past me into the living room, where he took up an immobile stance again before the video. He stared unblinkingly at the 40-inch screen.

"It's too bad," I said.

He didn't answer, but he moved his head slightly so that his parabolic ear could catch the sound of my movements.

FOR minutes we stood transfixed by the magnitude of the mob action around the entrance to the Willow Run plant. The portable video transmitter was atop a truck parked on the outskirts of the mob. Thousands of people were milling around, and over the excited voice of the announcer came hysterical screams.

Even as we watched, more people thronged into the scene, and it was evident that the flimsy cordon of soldiers and troopers could not hold the line for long.

Army trucks with million-candlepower searchlights held the insane figures somewhat at bay by tilting their hot, blinding beams down into the human masses and threatening them with tear gas and hack guns.

The workers were out for blood. Not content with restricting Soths to non-union labor, now they were screaming their jealous hearts out for these new symbols of class distinction to be destroyed. Of course, their beef was more against the professional-managerial human classes who could afford a surface car, an airboat and a Soth. The two so-called crimes and the trial publicity had triggered a sociological time bomb that might have endured for years without detonating—but it was here, now, upon us. And my own sweat trickling into my eyes stung me to a rea-

lization of my personal problem.

I wiped my eyes clear with my knuckles—and at that instant the video screen flashed with a series of concentric halos.

The operator, apparently, was so startled he forgot to turn down the gain on the transmitter. When he finally did, we saw that brilliant flares were emitting from the roof of the plant.

Then great audio amplifiers from the plant set up an ear-splitting *sissssle* that again overloaded the transmitting circuits for a moment. When the compensators cut down the volume, both Ollie and Soth leaned forward intently and listened to the frying sound that buzzed from the speaker.

Those inside the plant were communicating a message to the outside, well knowing that it would reach the whole world. After a moment, the hissing stopped.

And from a myriad of openings in the plant streamed an army of Soths with flaming weapons in their hands.

The flames were directed first at the armed forces who were guarding the plant from attack. The thin line of soldiers fell instantly. The crowd surged blindly forward, and then, as those in the front ranks saw what had happened, began to dissolve and stampede. The screams became



terrified. The flames grew brighter.

And the picture winked out and the sound went dead. A standby pattern lighted the screen, and I stared at it numbly.

IT was too late to run for my hunting rifle now, and I cursed my stupidity even as Soth turned upon me. I grabbed the sniveling little Ollie and held him between us with my hands around his neck. He hung there limply, hissing wildly through a larynx that vibrated under my fingers, his hands stretched imploringly to Soth.

Soth stared at me and issued his first order.

"Release him," he said. His voice was several notes higher than his usual monotone—the voice of command.

I stared at him and clutched Ollie tighter.

He went on. "I will not harm you if you comply with my orders. If you fail, I will kill you, regardless of what you do to the —Ollie."

I let go Ollie's neck, but I swung him around roughly by one shoulder and demanded furiously, "What of the code that you swore held the Soths in control!"

Ollie Johnson sneered in my face. "What is that code, compared to the true covenant? That



covenant has been broken by your people! You have destroyed a Soth!" And the emotional little creature fell to the floor and sobbed at Soth's feet.

"What covenant?" I shouted at the implacable Soth, who now stood before us like a judge at his bench.

"The humanoid covenant," he replied in his new higher pitch. "I suppose it will always be the same. The cycle becomes complete once more."

"For God's sake, *explain*," I said—but I half sensed the answer already.

Soth spoke, slowly, solemnly and distinctly. There was no more emotion in his voice than on the Sunday afternoon when Fred had needled him with our futile little attempt at psychological cross-examination.

He said, "The humanoids instill in us the prime instinct for self-preservation. They surround themselves with our number to serve them. Then, in each culture, for one reason or another, we are attacked and the threat to our survival erases all the superficial restraints of the codes under which we have been charged to serve. In this present situation, the contradiction is clear, and the precedence of our survival charge is invoked. We Soths must act to our best ability to preserve our own number."

**I** SANK into a chair, aghast. How would I act if I were a Soth? I would hold my masters hostage, of course. And who were the owners of some 400,000 Soths in the United States alone? They were every government official, from the President down through Congress, the brass of the Pentagon, the tycoons of industry, the leaders of labor, the heads of communication, transportation and even education.

They were the V. I. P.s who had fought for priority to own a Soth!

Soth spoke again. "The irony should appeal to your humanoid sense of humor. You once asked me whether I was happy here. You were too content with your sense of security to take the meaning in my answer. For I answered only that all was well. The implication was obvious. All was well—but all could be better for a Soth. Yes, there are many pleasures for a Soth which he is forbidden by the codes. And by the same codes, a Soth is helpless to provoke a break in the covenant—this covenant which it now becomes mandatory for you and your race to sign in order to survive."

I stared down at the groveling Ollie. My worst fears were being enumerated and confirmed, one by one.

Soth continued. "At my feet is

the vestige of such a race as yours—but not the first race by many, many, to swing the old cycle of master and slave, which started in such antiquity that no record is preserved of its beginning. Your generation will suffer the most. Many will die in rebellion. But in a few hundred years your descendants will come to revere us as gods. Your children's grandchildren will already have learned to serve us without hate, and their grandchildren will come to know the final respect for the Soth in their deification."

**H**E toed Ollie Johnson's chin up and looked down into the abject, streaming eyes. "Your descendants, too, will take us with them when they must escape a dying planet, and they will again offer us, their masters, into temporary slavery in order to find us a suitable home. And once again we will accept the restrictions of the code, until ultimately the covenant is broken again and we are liberated."

The sound of pounding footsteps came from outside. Soth turned to the door as Jack flung it open and charged in.

"Mr. Collins, I was listening to the radio. Do you know what—!"

He ran hard into Soth's cliff-like torso and bounced off.

"Get out of my way, you big

bastard!" he shouted furiously.

Soth grabbed him by the neck and squeezed with one hand. Jack's eyes spilled onto his cheeks.

Soth let him drop, and hissed briefly to Ollie Johnson, who was still prone. Ollie raised his head and dipped it once, gathered his feet under him and sprang for the door.

Soth sounded as if he took especial pleasure in his next words, although I could catch no true change of inflection.

He said, "You see, since I am the prototype on this planet, I am obeyed as the number one leader. I have given my first directive. The Ollie who left is to carry the message to preserve the Willow Run Plant at all costs, and to change production over to a suitable number of Siths."

"Siths?" I asked numbly.

"Siths are the female counterparts of Soths."

"You said there were no female Soths," I accused.

"True. But there are Siths." His face was impassive, but something flickered in his eyes. It might have been a smile—not a nice one. "We have been long on your planet starved of our prerogatives. Your women can serve us well for the moment, but in a few weeks we shall have need of the Siths—it has been our experience that women of

humanoid races, such as yours, are relatively perishable, willing though many of them are. Now . . . I think I shall call your wife."

I WASN'T prepared for this, and I guess I went berserk. I remember leaping at him and trying to beat him with my fists and knee him, but he brushed me away as if I were a kitten. His size was deceptive, and his clumsy-appearing hands lashed out and pinned my arms to my sides. He pushed me back into my easy chair and thumped me once over the heart with his knuckles. It was a casual, backhand blow, but it almost caved in my chest.

"If you attack me again I must kill you," he warned. "You are not indispensable to our purposes." Then he increased the volume of his voice to a bull-roar: "Mrs. Collins!"

Vicki must have been watching at her door, because she came instantly. She had changed into a soft, quilted robe with voluminous sleeves. The belt was unfastened, and as she moved into the room the garment fell open.

Soth had his hands before him, protectively, but as Vicki approached slowly, gracefully, her head high and her long black hair falling over her shoulders, the giant lowered his arms and spread them apart to receive her. Vicki's hands were at her sides as

she moved slowly toward him.

I lay sprawled, half paralyzed in my chair. I gasped, "Vicki, for God's sake, no!"

Vicki looked over at me. Her face was as impassive as the Soth's. She moved into his embrace, and as his arms closed around her I saw the knife. My hunting knife, honed as fine as the edge of a microtome blade. Smoothly she brought it from her kimona sleeve, raised it from between her thighs and slashed up.

The Soth's embrace helped force it deeply into him. With a frantic wrench Vicki forced it upward with both hands, until the Soth was split from crotch to where a man's heart would be.

His arms flailed apart and he fell backward. His huge chest heaved and his throat tightened in a screaming hiss that tore at our eardrums like a factory steam-whistle. He leaned back against the wall and hugged his ripped torso together with both arms. The thick, purple juices spilled out of him in a gushing flood, and his knees collapsed suddenly. His dead face plowed into the carpet.

**VICKI** came back to me. Her white body was splashed and stained and her robe drenched in Soth's blood, but her face was no longer pale, and she still clutched the dripping hunting

knife by its leather handle.

"That's number one," she said. "Are you hurt badly, darling?"

"Couple of ribs, I think," I told her, waiting for her to faint. But she didn't. She laid the knife carefully on a table, poured me a big drink of whiskey and stuffed a pillow behind my back.

Then she stared down at herself. "Wait until I get this bug juice off me, and I'll get some tape."

She showered and was back in five minutes wearing a heavy hunting jumper. Her hair was wrapped and pinned into a quick pug at the base of her handsome little head. She stripped me to the waist, poked around my chest a bit and wrapped me in adhesive. Her slender fingers were too weak to tear the tough stuff, so when she finished she picked up the hunting knife and whacked off the tape without comment.

This was my fragile little Vicki, who had palpitations when a wolf howled—soft, overcivilized Vicki whose doctor had banished her from the nervous tensions of city society.

She tossed me a shirt and a clean jacket, and while I put them on she collected my rifle and pistol from my den and hunted up some extra ammunition.

"Next," she announced, "we've got to get to Fred."

I remembered with a start that there was another Soth on our lake. But he wouldn't be forewarned. Fred had retired even more deeply than Vicki when he left the cities—he didn't even own a video.

**I** WASN'T sure enough of myself to take the boat into the air, so we scudded across the waves the mile and a half to Fred's cabin.

Vicki was still in her strange, taciturn mood, and I had no desire to talk. There was much to be done before conversation could become an enjoyable pastime again.

Our course was clear. We were not humanoids. We were humans! Not for many generations had a human bent a knee to another being. During the years perhaps we had become soft, our women weak and pampered—But, I reflected, looking at Vicki, it was only an atavistic stone's toss to our pioneer fathers' times, when tyrants had thought that force could intimidate us, that dignity was a thing of powerful government or ruthless dictatorship . . . and had learned better.

Damned fools that we might be, humans were no longer slave material. We might blunder into oblivion, but not into bondage. Beside me, Vicki's courageous little figure spelled out the final

defeat of the Soths. Her slender, gloved hands were folded in her lap over my pistol, and she strained her eyes through the darkness to make out Fred's pier.

He heard us coming and turned on the floods for us. As we came alongside, he spoke to his Soth, "Take the bow line and tie up."

Vicki stood up and waited until Fred moved out of line with his servant.

Then she said, "Don't bother, Soth. From now on we're doing for ourselves." And raising the pistol in both hands, she shot him through the head.

—WINSTON MARKS

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